If you were very young...and believed in "Magic things"

..... you'd call this your "Jaspé Castle"..and reign Queen of all Playland .....

Color . . . cleanliness . . . and comfort—these are the three C's of a good nursery floor. The Jaspé floor below (No. 18) sparkles with color, is inherently clean, is springy, quiet, and warm to walk upon.

THIS room is a happy place—and a magic place. Who ever heard of a drum for a light, of scalloped and tasseled walls—and a wind-wrinkled sea for a floor? Who couldn't be happy in such a sunshiny playroom? Who wouldn't be neat and tidy, too, with secret cupboards for storing toys—and a floor that didn't tell tales, even when you rode a great big "elephant" all over its colorful Jaspé face?

Mothers who were once little girls will *know* there's magic in a room like this. They'll find a lot of *real* magic in it, too, if they plan it around an Armstrong's Linoleum Floor. There's the magic of its color. And all sorts of modern designs—you see but two of them here.

Like the touch of a fairy wand, any Armstrong Floor magically transforms an old scratched-up one—hides it forever with new and lasting beauty. Somehow the rest of the decorations just fall naturally into place once your new floor is laid—cemented firmly over builders' deadening felt. And as for cleaning, here's more magic. No Cinderella drudgery. Accolac, the new lacquer finish, takes care of that. Just a simple dusting . . . an occasional waxing . . . and your floor cleaning is finished.

Several things more all mothers will appreciate. An Armstrong Floor is quiet, sound-deadening. It's sanitary—no cracks to catch and hold dirt. It's warm—absolutely free from drafts and wintry chills.

Do this next time you shop . . . Learn the secret of the charm of so many of the rooms you see pictured in magazines. Any good department, furniture, or linoleum store merchant will gladly reveal it to you. He'll show you the latest Armstrong Floor designs, tell you how quickly any you like can be installed, surprise you with the little cost of these permanently beautiful floors. See them whether or not you need a new floor right now.

Look for the CIRCLE A on the burlap back of the floor you buy

Do this too. Let Hazel Dell Brown send you her new book, "The Attractive Home—How to Plan Its Decoration." Recently revised and enlarged. New illustrations of model interiors—in full colors. "Decorator's Data Sheet" helps you enlist aid of author free. Book has helped thousands plan prettier homes. Sent on receipt of 10c to cover mailing. (Canada, 20c.)

Address your request to Armstrong Cork Company, 910 Mary Street, Linoleum Division, Lancaster, Pa.

Embossed Inlaid No. 6018

Marble Inlaid No. 87

ARABESQ - INLAID - PLAIN

Armstrong's Linoleum FLOORS

for every room in the house

JASPÉ - PRINTED - also ARMSTRONG'S QUAKER RUGS

[redacted]

Cashmere Bouquet Soap

Cashmere Bouquet Soap traces its ancestry to days when quality was the foremost thing to be considered—when a cake was used to accent one's hostess or occasion, or permitted for use upon rare and very special occasions—so highly was it regarded.

Whether you choose your soap for its lasting qualities; for the absolute purity of its ingredients; or for its delicate odor that suggests the woodlands after a spring rain—your choice will rest on Cashmere Bouquet.

If you have never known the delight of using this luxurious soap, a trial cake will be sent you gladly. Write to Colgate & Co., Dept. H, 199 Fulton Street, New York City.

Colgate & Co.
New York
Established 1806

Real goodness

in this satisfying ready-cooked food

ALL you do with this new Beech-Nut Prepared Spaghetti is to heat it—and put it on the table. Everyone loves it at the very first taste. Tender and delicious, wholesome and inviting, already seasoned with a distinctive Beech-Nut sauce of creamy cheese and vine-ripened tomatoes.

Just heat this Beech-Nut Prepared Spaghetti in the can or in a saucepan. Either way you can serve your meal *in less than fifteen minutes*. And it *is* a meal—a substantial meal, and yet delightful in warm weather. Not only is the spaghetti itself made by Beech-Nut but the tomato sauce as well. So it is a Beech-Nut product from beginning to end.

The Beech-Nut spaghetti and macaroni plant at Canajoharie, N. Y., is a pleasant sight and is always open to visitors during working hours. The little valley town swept by pure air from the foothills of the Adirondack Mountains—the glowing sunlight flooding the white workrooms—and above everything else the vigorous native-born Beech-Nut workers—it is a picture to carry away and remember. And the strongest evidence that the Beech-Nut label covers only the finest products of their kind that can be made.

Beech-Nut Prepared Spaghetti is obtainable at all the best grocery stores. Ask for it by name.

BEECH-NUT PACKING COMPANY, *Canajoharie, N. Y.*

Other BEECH-NUT Macaroni Products

If you desire the same fine quality of macaroni or spaghetti in packaged form, there is a wide variety to choose from—Beech-Nut Macaroni, Spaghetti, Vermicelli, Rings and Elbows. Ask your grocer.

BEECH-NUT
"Foods and Confections of Finest Flavor"

Beech-Nut Bacon
Beech-Nut Peanut Butter
Beech-Nut Macaroni, Spaghetti, Vermicelli
Beech-Nut Macaroni Elbows
Beech-Nut Macaroni Rings
Beech-Nut Prepared Spaghetti
Beech-Nut Pork and Beans
Beech-Nut Catsup, Chili Sauce
Beech-Nut Prepared Mustard
Beech-Nut Jams and Jellies
Beech-Nut Marmalades and Preserves

BEECH-NUT CONFECTIONS
Beech-Nut Mints, Caramels
Beech-Nut Fruit Drops
Beech-Nut Chewing Gum

Dept. H-3
Beech-Nut Packing Co.,
Canajoharie, N. Y.
Please send, without expense to me, Mrs. Ida Bailey Allen's Beech-Nut Book of menus, recipes and service information.

Name_____
Street_____
City and State_____

Beech-Nut
Prepared Spaghetti

A wee colleen from the old country

LITTLE SHEILA MATIER was born in Ireland one spring not so very long ago. Soon afterward her parents set sail for America and settled in Southern California.

Their first discovery on arriving here was that nowhere in this country could they buy the baby food that Sheila had lived on since she was born—the only food in fact, that had ever agreed with her delicate digestion.

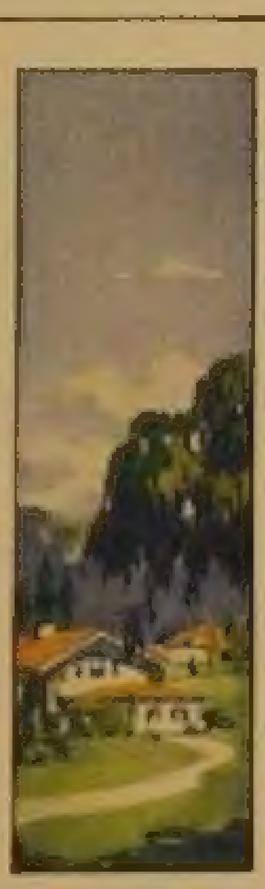
"We tried one thing after another," said her father, "but without success. Our baby grew thinner every day—in fact, she was starving to death. My wife was desperate.

"One day she suddenly remembered that someone had mentioned Eagle Brand. She got a can and baby enjoyed her first meal for days. We have never left off since.

"Now, at six months, Sheila weighs over sixteen pounds and is as happy and pretty a baby as anyone could find."

The change in Sheila's health has been truly remarkable. In England she was in the care of two nurses and the doctor visited her every day. Since she started on Eagle Brand she has thrived wonderfully. A nurse from a Maternity Hospital recently examined her and pronounced her one of the best nourished children she had ever seen.

"Our friends—good Californians all—give the credit to the climate," writes Mr. Matier, "but Sheila's mother and I know better. But for Eagle Brand our baby would have starved."



EVERY year Eagle Brand literally saves the lives of hundreds of babies. In countless instances it has helped to build up sickly, delicate babies into sturdy, healthy children.

Eagle Brand agrees with most babies because it is exceptionally digestible. It is made of pure cow's milk and cane sugar—nothing else—combined by a special condensing process. This process breaks down the hard casein of the cow's milk, which is the indigestible part, and makes a food that even the most delicate baby stomach can absorb. Eagle Brand contains all the food elements needed for vigorous growth, and has the necessary vitamin content too. Sealed in sterilized airtight containers, it is kept free from harmful contamination.

Ordinarily nothing is better for a baby than mother's milk. But if you cannot nurse your baby, or if he is not thriving on his present food, put him on Eagle Brand at once. Don't waste precious time experimenting. You can't begin too soon with this food—tried and proved by mothers and doctors for 67 years.

No matter where you go, Eagle Brand is available. Always absolutely uniform. *The Borden Company, 142 Borden Building, 350 Madison Avenue, New York, N. Y.*

If you want help in solving the problems of feeding and caring for your baby, send for "Baby's Welfare," written by a physician for young mothers. It is free.

SHEILA MATIER, daughter of Mr. and Mrs. Hugh A. Matier, 635 North Columbia Avenue, Glendale, California

Borden's
EAGLE BRAND
CONDENSED MILK

Also makers of Borden's
EVAPORATED MILK
MALTED MILK
CONFECTIONERY

Nine months old baby crosses the American desert

WESLEY CHATON THOMPSON, Jr., the young hero of this story, is a real person living today at 679 E. 4th Street, La Verne, California, with his parents, Mr. and Mrs. W. C. Thompson.

When Wesley was less than a year old his people were obliged to cross the deserts of Nevada and Utah.

Traveling with a young baby is difficult at best. But the problem of artificial feeding under such circumstances is serious enough to make any young mother quake.

But for Mrs. Thompson the hazardous trip had no terrors because she was already using Eagle Brand for her baby with great success.

"Wesley Chaton Thompson never had any other nourishment than Eagle Brand Milk", writes his father.

"We stocked up on Eagle Brand at all the small towns along the trails."

Thus equipped the baby made the trip in perfect safety. His father says further, "He has never known a sick day up to this date (he is now four years old) and is surely a picture of health."

"I can certainly recommend this 'Eagle Brand' to any one for wee small children."

"We stocked up on Eagle Brand at the small towns all along the trails"

Not many mothers are obliged to face the problem Mrs. Thompson solved so easily with Eagle Brand, but almost all of us travel more or less, going on vacations, or home to see "the folks." And this interesting anecdote of the Thompson family's experiences in the desert shows how easily Eagle Brand can be obtained and how satisfactory its use is under the most difficult circumstances.

Eagle Brand is pure cow's milk and cane sugar combined scientifically to give all the elements baby needs in a highly digestible form.

It is a complete food in itself. No difficult formula is needed to prepare it. It is packaged in a safe, sealed and sterilized container which keeps it free from all possible contamination. It is used so universally by American mothers that you can purchase it even in out of the way places like the desert towns Mr. Thompson mentions.

Because of these important facts you will find Eagle Brand more used for infant feeding than all other prepared foods combined.

If you cannot nurse your baby you can depend upon Eagle Brand. Thousands of mothers use it and thousands of doctors recommend its use. It is the safe, sure way when you must use artificial feeding.

Send for your free copy of the useful Borden baby book *Baby's Welfare*. The Borden Company, 138 Borden Building, 350 Madison Avenue, New York.

Borden's EAGLE BRAND
CONDENSED MILK

HEINZ PIER
at Atlantic City

This great pier, extending far into the ocean, invites Atlantic City visitors (they number ten millions a year) to rest and enjoy the ocean breezes; to inspect its interesting exhibits of art objects and curiosities of educational and artistic value from all parts of the world; to make use of the writing and reading rooms with files of daily papers; to see the moving pictures and listen to the lectures on the evolution of food making and to learn more about the 57 Varieties by putting them to the test of taste.

To all or any of this, all are welcome.

WHY WE *ADVERTISE* THE "57"

HEINZ Pier at Atlantic City is an advertisement. It is an advertisement of the Heinz business, a business of making foods—the 57 Varieties. The Heinz Kitchens at Pittsburgh which are thrown open daily to thousands of visitors is an advertisement. So are the presentations in magazines, and newspapers, and on street car cards. Our business is built upon the confidence that people have come to feel in the name "Heinz". Every statement that bears the name "Heinz" or the "57", and every can, bottle and jar that bears these familiar emblems is entrusted with the Heinz reputation—for purity, wholesomeness and good taste. That is why the "advertising" of Heinz 57 Varieties may be accepted by everyone as a safe guide to good things to eat.

57

H · J · HEINZ · COMPANY, *Pittsburgh, Pa.*

© H. H. Co.

Holeproof Hosiery

Your first pair of Holeproof silk hose will be your introduction to wearing quality that is amazing in comparison with the service of ordinary silk hosiery. But extraordinary durability is not the only feature for which Holeproof is famous. It offers all of the style, lustrous beauty, and perfect fitting qualities that well-dressed women demand.

Made in a wide variety of regular and fancy styles in all popular materials for men, women and children. If not obtainable locally, write for price-list and illustrated booklet

HOLEPROOF HOSIERY COMPANY, MILWAUKEE, WISCONSIN

HOLEPROOF HOSIERY COMPANY OF CANADA (Limited) LONDON, ONTARIO

ARONSON TOY

THE SATURDAY EVE[illegible]T

[illegible]ly
[illegible]Fran'l

5cts. DEC. 27, '24

Ben Ames Williams—Meade Minnigerode—Frank Condon—Isaac F. Marcosson
George Agnew Chamberlain—Wythe Williams—Walter DeLeon—Will Payne

PEOPLE'S HOME JOURNAL

December 1924

15 Cents

Get this newest, biggest fun-maker ever
Loaded with fun for old and young at Hallowe'en, Thanksgiving and other parties, Mardi Gras, Carnivals, Fairs, etc.
SPRING Archie on the crowd at Hallowe'en! In no time you'll be the life of the party and you'll have everybody roaring. For Archie's a scream—the most comical fellow you ever saw! He simply can't make his eyes behave! And what eyes they are! You pull the string and they throw sparks! Once they get to sparking, they flash fun that's infectious. There never was anyone like Archie! His complexion, his marvelous mauve tie, his grin, his red hair, his freckles, are just immense.
You'll want to own this wonderful new fun-maker from the moment you see him. Apart from being irresistibly amusing. Archie is mechanically perfect. His eyes will flash five thousand times without a miss. Then you just slip in a little reload and he's off again, funnier than ever. There's no battery, no fire, no possible danger. And he's strong too!
Don't miss this opportunity to make the party the funniest and most successful ever Get Archie from your dealer or mail the coupon.
ARCHIE
the Karnival Kid
..his eyes sparkle!
If your dealer doesn't have Archie in stock
MAIL THIS COUPON
THE ART METAL WORKS
9 Atwood Street Newark, N. J.
Name
Street
City
State
$1

"IN HIS FATHER'S FOOTSTEPS

THE SATURDAY EVENING

An Illustrated Week
Founded Ao Dr 1728 by Benj

SEPTEMBER 20, 1924

5c. the Copy

Beginning THE BLACK CARGO—By J. P. Marquand

Life

$1000.00 in Prizes for the Best Titles

See Page 10

OCTOBER 23, 1924

"Aw, quit yer kiddin'!"

PRICE 15 CENTS

JELL-O

America's most famous dessert

NE of the prime [illegible] JELL-O [illegible] always ready. When a package of JELL-O and the ingredients usually on the kitchen shelf are used, nothing but water [illegible] is necessary to prepare a dessert which is sure to please everyone. In the [illegible] there are [illegible] flavors, each variety can be prepared in [illegible] ways. What could we offer that would [illegible] more than a pretty can be in a [illegible] world were JELL-O [illegible] The recipes below, which are [illegible] of the [illegible] JELL-O secrets of others.

Orange Jell-O

Dissolve [illegible] package of Orange Jell-O in a pint of boiling water and set aside cold place to harden. Turn out on a plate and serve [illegible] with whipped cream.

Imperial Salad

[illegible] cup of cream, half a cup of pineapple, add one tablespoonful of lemon juice, enough sweet cream to cover the pineapple. Dissolve one package of Lemon Jell-O [illegible] as Jell-O begins to set, add three slices of canned pineapple cut into small cubes, one cup of [illegible] grapes seeded and cut in halves, one cup of walnut meats broken in pieces, one cup of celery cut fine. Mix all ingredients and when Jell-O is nearly set turn into one large mould or individual moulds. Serve with cream salad dressing.

Cherry Jell-O

Cherry Jell-O has the peculiar and delicate cherry flavor which is not [illegible] by [illegible] and fruits except cherries. It is of course the most delicate flower. The pure dessert is made by dissolving a package of Cherry Jell-O in a pint of boiling water and is served either with or without whipped cream.

Mrs Rovers Jamboliya

[illegible] cup of [illegible] cup of [illegible] cup of [

DUPLEX STOKERS

—firing 75 new Mikados on the C. M. & St. P.

THE above illustration shows one of 75 new Mikado type locomotives recently added to the motive power of the Chicago Milwaukee & St. Paul Railroad. All of these locomotives are DUPLEX STOKER fired.

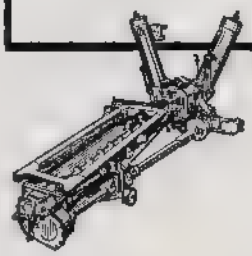
This is another repeat order in which Duplex Stokers were selected because of satisfactory past performance, the Chicago Milwaukee & St. Paul having had 240 Duplex Stoker fired locomotives in service when the last order was placed.

Duplex Stokers give unfailing satisfaction because they are able to fire **any** locomotive to full capacity, and are so well and staunchly built that dependability is inherent and economical operation a certainty.

6936 of our Stokers now in Service

5766 of them are Duplexes

—"Because the Promise has been Performed"



LOCOMOTIVE STOKER CO.

Main Office and Works—30 General Robinson St., West

Northside, PITTSBURGH, PA.

Westinghouse Bldg.
150 Broadway
NEW YORK

Munsey Bldg.
1329 "F" St., N. W.
WASHINGTON

Railway Exchange Bldg.
80 E. Jackson Blvd.
CHICAGO

WORLD'S LARGEST MANUFACTURERS OF LOCOMOTIVE STOKERS

Coal Pushers for Hand-fired Locomotives

5¢ a Copy

June 7, 1924

Collier's

THE N WEEKLY

In this issue: A Baseball Story by .

ALVIN SILVER

Long-Life Plate

LANCASTER

PLATINUM FINISH

THE following illustrations show our "Long Life" Quality Plate which will satisfy the utmost particular customer. It is produced with the same care, skill and attention to details as sterling silver. Each piece is heavily plated with a uniform weight and thickness of pure silver to resist the hardest wear and insure the longest life.

5 o'Clock Tea,	Six packed in unlined box	$9 18 per dozen
Tea,	" " " " "	9 18 "
Dessert,	" " "	17 76 "
Table,	" " "	18 36 "
Soup,	" " "	18 36 "
Dessert Fork,	" " "	17 76 "
Dinner Fork,	" " "	18 36 "
Dessert Knife HH,	" " box (Stainless blades)	10 06 "
Dinner Knife, HH,	" " " " "	11 46 "
Med Knife Solid H	" " " " "	17 94 "

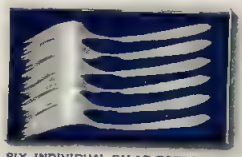
Set of 6 knives and 6 forks in lined box

Dessert Size	$24 84
Dinner Size	28 44
Dessert size with solid handle knife	18 44

ALVIN PATENT

ALVIN SILVER
Long-Life Plate

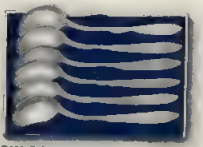
LANCASTER
PLATINUM FINISH



SIX INDIVIDUAL SALAD FORKS, SET
Per set $7.18

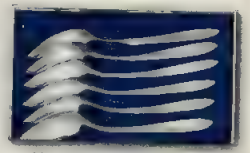
FIVE O'CLOCK TEAS
Six in unlined box $4.59
Six in lined box 6.48

SIX OYSTER FORKS, SET
Per set $6.05



SIX BOUILLON SPOONS, SET
Per set $3.56

SIX ICED TEA SPOONS, SET
Per set $6.08



SIX ORANGE OR GRAPE-FRUIT SPOONS, SET
Per set $5.84

SIX BUTTER SPREADERS, SET
Per set $7.50

BUTTER KNIFE
Each $1.85

SUGAR SHELL
Each $1.64

BERRY SPOON
Each $3.76

SIX COFFEE SPOONS, SET
Per set $4.59

LADLES
Cream Ladle, each $2.23
Gravy Ladle, each 2.02

COLD MEAT FORK
Each $3.44

SUGAR TONGS
Each $2.37

BUTTER KNIFE AND SUGAR SHELL, SET
Per set $3.48

TOMATO SERVER (not illustrated), Hollow Handle, $6.66; Flat Handle, $4.17

ALVIN PATENT

For prices of items not illustrated see complete price list, 5th page following

LANCASTER

PLATINUM FINISH

THE following illustrations show our "Long Life" Quality Plate which will satisfy the utmost particular customer. It is produced with the same care, skill and attention to details as sterling silver. Each piece is heavily plated with a uniform weight and thickness of pure silver to resist the hardest wear and insure the longest life.

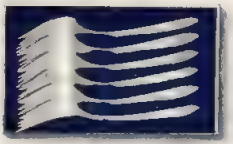
5 o'Clock Tea,	Six packed	in lined box	$9.8 Set of Six
Tea,	"	"	9.8 "
Dessert,	"	"	17.76 "
Table	"	"	18.36 "
Soup	"	"	18.36 "
Dessert Fork	"	"	17.76 "
Dinner Fork	"	"	18.36 "
Dessert Knife, HH,	"	box (Stainless blades)	30.96 "
Dinner Knife, HH	"	"	31.56 "
Med. Knife Solid H	"	"	17.04 "

Set of 8 knives and 8 forks in lined box
Dessert Size . . . $24.84
Dinner Size . . . 25.44
Dessert size with solid handle knife 18.44

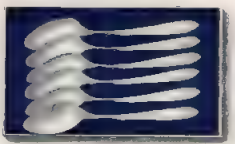
ALVIN PATENT

LANCASTER

PLATINUM FINISH



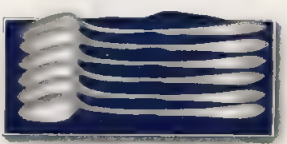
SIX INDIVIDUAL SALAD FORKS, SET
Per set $9.18



FIVE O'CLOCK TEAS
Six in unlined box . . . $4.59
Six in lined box 5.49

SIX OYSTER FORKS, SET
Per set $6.06

SIX BOUILLON SPOONS, SET
Per set $8.50



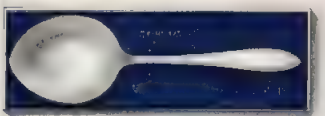
SIX ICED TEA SPOONS, SET
Per set $6.68

SIX ORANGE OR GRAPE-FRUIT SPOONS, SET
Per set $5.84

SIX BUTTER SPREADERS, SET
Per set $7.50

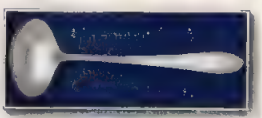
BUTTER KNIFE
Each $1.85

SUGAR SHELL
Each . $1.66

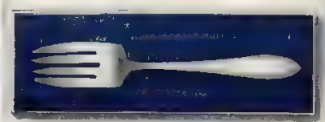


BERRY SPOON
Each $3.76

SIX COFFEE SPOONS, SET
Per set $4.50



LADLES
Cream Ladle, each . $2.22
Gravy Ladle, each . 2.92



COLD MEAT FORK
Each $2.44

SUGAR TONGS
Each $2.37

BUTTER KNIFE AND SUGAR SHELL, SET
Per set $3.48

TOMATO SERVER (not illustrated), Hollow Handle, $6.68; Flat Handle, $4.17

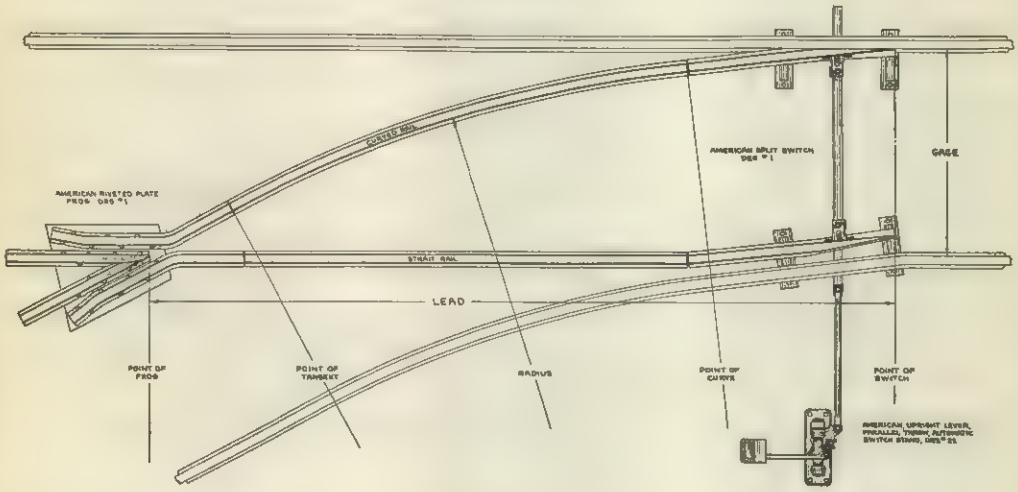
ALVIN PATENT

For prices of items not illustrated see complete price list, 5th page following

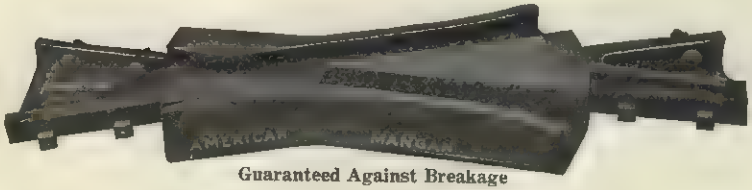
THE AMERICAN FROG & SWITCH CO.

Main Office and Works
HAMILTON, OHIO

Railway Track Equipment
FOR
Railroads—Industrial—Mines—Quarries



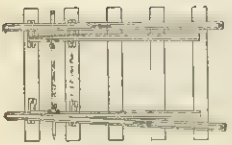
Original American in Design



Original American Alloy Steel

Guaranteed Against Breakage

American "Mangan" Steel Frog Design No. 91

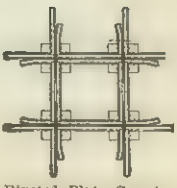


Split Switch
American Design No. 1
Made Straight or Curved

Solid Manganese or Alloy Steel Frog.

Guaranteed against breakage and to outwear any other type of rail or steel frog. Made of any angle and weight of rail. The MANGAN is the most widely used frog in the market today.

We make a specialty of Penna. R. R., N. Y. C., N. & W., C. & O., B. & O., W. & L. E., N. C. & ST. L. Track Equipment



Riveted Plate Crossing
American Design No. 6

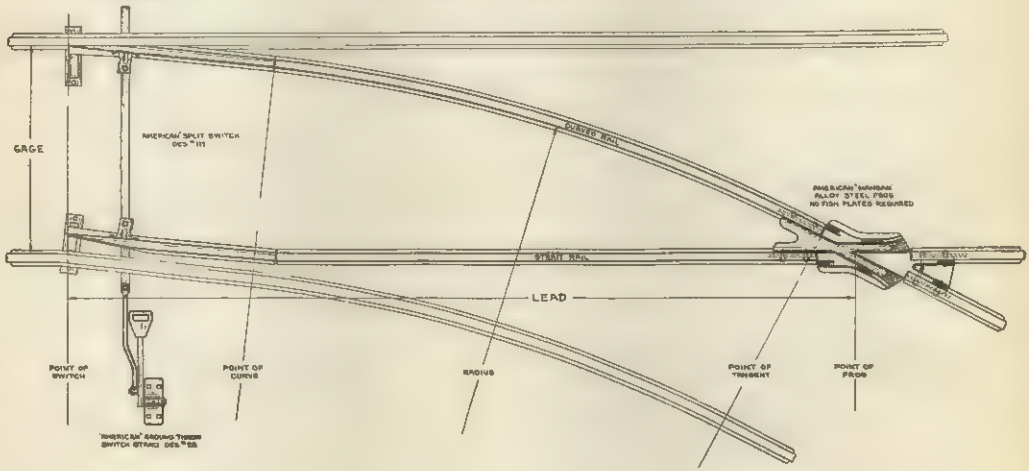
THE AMERICAN FROG & SWITCH CO.

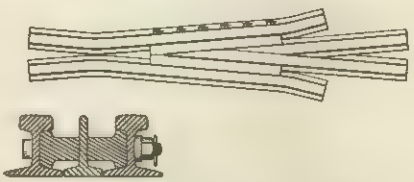
PITTSBURGH CHICAGO NEW YORK NEW ORLEANS RICHMOND

BIRMINGHAM WASHINGTON

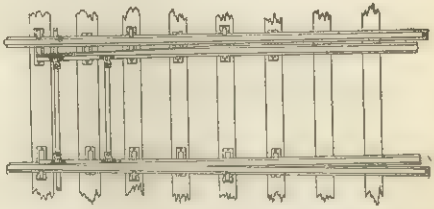
234 Steuart Street, SAN FRANCISCO, CAL.

Stiff Bolted, Spring, Solid or Manganese Insert Frogs; Plain and Reinforced Split Switches; Guard Rails; Clamps; Rail Braces; Tie Plates; Crossings; Crossovers, and Switch Stands of every type for all weights and sections of rail. Layouts for Mine Shaft Bottoms, Tipples and Incline Planes.





American Standard Stiff Bolted Frog Design No. 2 For Sidings and Industrial Purposes. Made of Rail Weighing 70 lb. and Upward.



American Standard Design No. 95 Split Switch

American Design No. 3 Ground Throw Switch Stand

American Design No. 4 Automatic Switch Stand

Guard Rails, equipped with Blocks and Bolts or with American "MANGAN" Special Alloy Steel Adjustable Clamp furnished with turnouts if desired.

Stock Shipments Made From Our Hamilton, Pittsburgh and New Orleans Yards.

CROSS CUT SAWS

BAY STATE

No. 205A—Tuttle Tooth

Special quality steel, thin back, 14 gauge at tooth edge, 16 gauge at back. 5 in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	5	6	7
Each	$4.50	5.00	5.50

NARROW CROSS CUT SAWS

BAY STATE

Hollow Back, Perforated Lance Tooth.

No. 214—Special quality steel, 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$3.75	4.00	4.25

No. 0214—Special quality steel, two gauge taper. 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$4.00	4.25	4.50

ONE MAN CROSS CUT SAWS

SIMOND'S

No. 222—Perforated Lance Tooth

Crucible cast steel, straight taper ground, beech handle and supplementary handle.

Length, feet	3	3½	4
Weight each, lbs.	3¼	4	4¾
Each	$4.00	4.25	4.50

BAY STATE

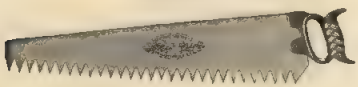
No. 231—Tuttle Tooth

Special quality steel, carefully ground, beech handle and supplementary handle.

Length, feet	3	3½	4
Weight each, lbs.	2½	3	4½
Each	$2.75	3.25	3.75

HAND ICE SAWS

DISSTON



For use on ice wagons, in cold storage houses, etc., 15 gauge crucible steel deep tooth blade, length 26 inches, width at heel 5⅝ in., handle riveted on. Per dozen

No. 75—Japanned malleable iron handle, weight per dozen 36 pounds $24.00

One sixth dozen in a box.

HACK SAW FRAMES

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubberoid handle.

Per dozen

No. 1048—Adjustable for blades 8 to 12 in., depth of cut 2⅛ in., without blade, weight per dozen 13 lbs. $15.00

One in a box.

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubber composition handle.

Per dozen

No. 1096—Adjustable for blades 8 to 12 in., depth of cut 3¼ in., without blade, weight per dozen 22 lbs. . . . $21.00

One in a box.

ATKINS PISTOL GRIP

High grade steel frame, ¾ in. wide, ⅛ in. thick, back reinforced with steel sheath, nickel plated finish, hard black rubber handle.

Per dozen

No. 11—Adjustable for blades 8 to 12 in., depth of cut 4 in., with blade, weight per dozen 20 lbs. $21.00

One in a box.

ATKINS EXTENSION

High grade steel, heavily nickel plated and highly polished, enameled wood handle will face in four directions.

Per dozen

No. 9—Adjustable for blades 8 to 12 in., without blade, weight per dozen 13 lbs. $6 00

One in a box.

ATKINS

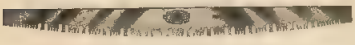
Black japanned iron frame, black wood handle.

Per dozen

No. 3—Length 8 in., blade can be faced in four directions, without blade, weight per dozen 20¾ lbs. $4 80

One half dozen in a box.

CROSS CUT SAWS
ATKINS



No. 4—Perfection Pattern Tooth

Atkins' silver steel, 14 gauge at tooth edge, 20 gauge at back. **6 in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4½	5	6
Each	$7.50	8.50	9.50

25 in a case.

No. 5—Perfection Pattern Tooth

Atkins silver steel extra wide blade, 14 gauge at tooth edge, 20 gauge at back. **7 in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	5	5½	7
Each	$7.50	8.50	9.50

25 in a case.

No. 12—Perfection Pattern Tooth

Atkins silver steel narrow blade, 14 gauge at tooth edge, 17 gauge at back, used principally for falling or for cutting small timber. **4½ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4	4¾	5¼
Each	$7.50	8.50	9.50

25 in a case

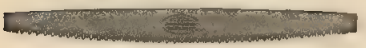
No. 222—Diamond Tooth

Silver steel, thin back, 14 gauge at tooth edge, 18 gauge at back, **6½ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4¾	5¾	7¼
Each	$5.50	6.50	7.50

25 in a case.

DISSTON'S GREAT AMERICAN



M Tooth

Finest crucible steel, hardened and tempered, taper ground, five gauges thinner on back than on tooth edge.

	Each
No. 1—Length 5 ft., width at center 6¾ in., weight each 5 lbs.	$6.50

CROSS CUT SAWS
DISSTON'S SUWANEE

Perforated Teeth

Finest crucible steel, hardened and tempered, taper ground, four cutter teeth with raker, six gauges thinner on back than on tooth edge. **6½ in. wide at center.**

No. 495—Length, feet	5	5½	6
Weight each, lbs.	5	5¾	6½
Each	$7.50	8.50	9.50

25 in a case.

SIMONDS CRESCENT GROUND

Tuttle Tooth

Crucible cast steel, two cutting teeth to each raker tooth, 14 gauge at tooth edge, 19 gauge at back. **7 in. wide at center.**

	Each
No. 13—Length 6 ft., weight each 7½ lbs.	$9.50

25 in a case.

No. 22—Perforated Lance Tooth

Crucible cast steel, four cutting teeth to each raker tooth, 5 and 5½ ft. are 15 gauge at tooth edge and 20 gauge at back, 6 ft. are 14 gauge at tooth edge and 19 gauge at back. **7 in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	5½	6¼	7½
Each	$7.50	8.50	9.50

25 in a case.

SIMOND'S CRESCENT GROUND FELLING

No. 188—Perforated Lance Tooth

Crucible cast steel, four cutting teeth to each raker tooth, 14 gauge at tooth edge, 19 gauge at back. **5¼ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4¼	5	5¾
Each	$7.50	8.50	9.50

25 in a case

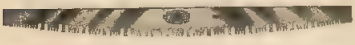
No. 325—Perforated Lance Tooth

Crucible cast steel, four cutting teeth to each raker tooth, 14 gauge at tooth edge, 19 gauge at back. **4½ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4	5	5½
Each	$8.50	9.50	

25 in a case.

CROSS CUT SAWS
ATKINS



No. 4—Perfection Pattern Tooth

Atkins' silver steel, 14 gauge at tooth edge, 20 gauge at back. **6 in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4½	5	6
Each	$7.50	8.50	9.50

25 in a case.

No. 5—Perfection Pattern Tooth

Atkins silver steel extra wide blade, 14 gauge at tooth edge, 20 gauge at back. **7 in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	5	5½	7
Each	$7.50	8.50	9.50

25 in a case.

No. 12—Perfection Pattern Tooth

Atkins silver steel narrow blade, 14 gauge at tooth edge, 17 gauge at back, used principally for falling or for cutting small timber. **4½ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4	4¾	5¼
Each	$7.50	8.50	9.50

25 in a case

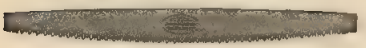
No. 222—Diamond Tooth

Silver steel, thin back, 14 gauge at tooth edge, 18 gauge at back, **6½ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4¾	5¾	7¼
Each	$5.50	6.50	7.50

25 in a case.

DISSTON'S GREAT AMERICAN



M Tooth

Finest crucible steel, hardened and tempered, taper ground, five gauges thinner on back than on tooth edge.

	Each
No. 1—Length 5 ft., width at center 6¾ in., weight each 5 lbs.	$6.50

CROSS CUT SAWS
DISSTON'S SUWANEE

Perforated Teeth

Finest crucible steel, hardened and tempered, taper ground, four cutter teeth with raker, six gauges thinner on back than on tooth edge. **6½ in. wide at center.**

No. 495—Length, feet	5	5½	6
Weight each, lbs.	5	5¾	6½
Each	$7.50	8.50	9.50

25 in a case.

SIMONDS CRESCENT GROUND

Tuttle Tooth

Crucible cast steel, two cutting teeth to each raker tooth, 14 gauge at tooth edge, 19 gauge at back. **7 in. wide at center.**

	Each
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25 in a case.

No. 22—Perforated Lance Tooth

Crucible cast steel, four cutting teeth to each raker tooth, 5 and 5½ ft. are 15 gauge at tooth edge and 20 gauge at back, 6 ft. are 14 gauge at tooth edge and 19 gauge at back. **7 in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	5½	6¼	7½
Each	$7.50	8.50	9.50

25 in a case.

SIMOND'S CRESCENT GROUND FELLING

No. 188—Perforated Lance Tooth

Crucible cast steel, four cutting teeth to each raker tooth, 14 gauge at tooth edge, 19 gauge at back. **5¼ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4¼	5	5¾
Each	$7.50	8.50	9.50

25 in a case

No. 325—Perforated Lance Tooth

Crucible cast steel, four cutting teeth to each raker tooth, 14 gauge at tooth edge, 19 gauge at back. **4½ in. wide at center.**

Length, feet	5	5½	6
Weight each, lbs.	4	5	5½
Each	$8.50	9.50	

25 in a case.

CROSS CUT SAWS

BAY STATE

No. 205A—Tuttle Tooth

Special quality steel, thin back, 14 gauge at tooth edge, 16 gauge at back. 5 in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	5	6	7
Each	$4.50	5.00	5.50

NARROW CROSS CUT SAWS

BAY STATE

Hollow Back, Perforated Lance Tooth.

No. 214—Special quality steel, 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$3.75	4.00	4.25

No. 0214—Special quality steel, two gauge taper. 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$4.00	4.25	4.50

ONE MAN CROSS CUT SAWS

SIMOND'S

No. 222—Perforated Lance Tooth

Crucible cast steel, straight taper ground, beech handle and supplementary handle.

Length, feet	3	3½	4
Weight each, lbs.	3¼	4	4¾
Each	$4.00	4.25	4.50

BAY STATE

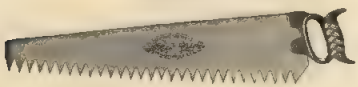
No. 231—Tuttle Tooth

Special quality steel, carefully ground, beech handle and supplementary handle.

Length, feet	3	3½	4
Weight each, lbs.	2½	3	4½
Each	$2.75	3.25	3.75

HAND ICE SAWS

DISSTON



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No. 75—Japanned malleable iron handle, weight per dozen 36 pounds $24.00

One sixth dozen in a box.

HACK SAW FRAMES

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubberoid handle.

Per dozen

No. 1048—Adjustable for blades 8 to 12 in., depth of cut 2⅛ in., without blade, weight per dozen 13 lbs. $15.00

One in a box.

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubber composition handle.

Per dozen

No. 1096—Adjustable for blades 8 to 12 in., depth of cut 3¼ in., without blade, weight per dozen 22 lbs. . . . $21.00

One in a box.

ATKINS PISTOL GRIP

High grade steel frame, ¾ in. wide, ⅛ in. thick, back reinforced with steel sheath, nickel plated finish, hard black rubber handle.

Per dozen

No. 11—Adjustable for blades 8 to 12 in., depth of cut 4 in., with blade, weight per dozen 20 lbs. $21.00

One in a box.

ATKINS EXTENSION

High grade steel, heavily nickel plated and highly polished, enameled wood handle will face in four directions.

Per dozen

No. 9—Adjustable for blades 8 to 12 in., without blade, weight per dozen 13 lbs. $6 00

One in a box.

ATKINS

Black japanned iron frame, black wood handle.

Per dozen

No. 3—Length 8 in., blade can be faced in four directions, without blade, weight per dozen 20¾ lbs. $4 80

One half dozen in a box.

THE BABCOCK & WILCOX CO.

85 Liberty Street, NEW YORK, N. Y.

BRANCH OFFICES

Boston	49 Federal St	Detroit	Ford Bldg.
Philadelphia	Packard Bldg.	New Orleans	521-5 Baronne St.
Pittsburgh	Farmers Deposit Bank Bldg.	Houston, Tex.	Southern Pacific Bldg.
Cleveland	Guardian Bldg.	Denver	432 Seventeenth St.
Chicago	Marquette Bldg.	Salt Lake City	705-6 Kearns Bldg.
Cincinnati	Traction Bldg.	San Francisco	Sheldon Bldg.
Atlanta	Candler Bldg.	Los Angeles	404-5 Central Bldg.
Phoenix, Arizona	Heard Bldg.	Seattle	L. C. Smith Bldg.
Portland, Oregon	205 Oasco Bldg.	Havana, Cuba	Calle de Aguiar 104
Fort Worth, Tex.	Flatiron Bldg.	San Juan, Porto Rico	Royal Bank Bldg.
Honolulu, H. T.	Castle & Cooke Bldg.		

Manufacturers of

Water Tube Boilers, Superheaters and Stokers

Products

Babcock & Wilcox, Rust and Stirling Water Tube Boilers; Mechanical Stokers; Superheaters.

Introduction

Boiler practice has changed materially in the past 10 years. Higher pressures and higher superheat have come into every-day practice and with these changes have also come larger units and higher rates of combustion, due to better stokers and furnace arrangement, better methods of feedwater treatment, improved coal and ash handling apparatus, and a better understanding of the care and operation of boilers. During this period great improvements have been made in the utilization of fuels other than coal. These developments have brought about a change in boiler room design and necessitate a much more careful study of the size of the plant, service conditions, fuel, water and class of boiler room help available. By reason of the different factors involved, the selection of a proper boiler unit is much more complex than in the past. Years ago this company manufactured a line of so-called "standard" boilers. These standards are still in existence, but the sale of a standard boiler today is a rarity, because operating conditions cannot be even approximately standardized. Each boiler sale is approached by this company as an entirely new and independent engineering problem, the factors involved determining the particular type, size and setting of boiler offered.

Each of our boilers is built to conform with the A.S.M.E. code, and a certificate of shop inspection by the Hartford Steam Boiler Inspection & Insurance Co. or other qualified inspection company will be furnished.

About 33,000,000 H. P. of boilers manufactured by The Babcock & Wilcox Company are in use.

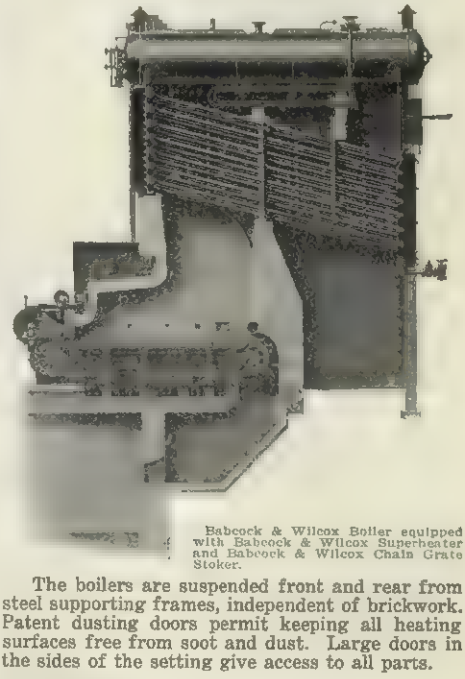
Babcock & Wilcox Boiler

The heating surface is made up of sections, each consisting of tubes and a header at each end, connected to a drum or drums above them. The longitudinal drum type is illustrated, but the company also builds a cross drum type having the drum transverse to the sections. The lowest point of each section is connected to a mud drum.

Headers into which the tubes are expanded are of forged steel and of sinuous form so that the tubes are in a staggered position when assembled. This staggering of the tubes breaks up the gases and causes them to impinge on every tube.

Opposite each tube-end in the headers there is a handhole of sufficient size to permit inspection, cleaning or renewal of the tube. Handholes are closed by suitable handhole fittings.

The gases of combustion are caused to make three passes over the heating surface by baffles constructed of special brick and cast iron flame plates. The furnace is readily adaptable to any fuel available, solid, liquid, or gaseous.



Babcock & Wilcox Boiler equipped with Babcock & Wilcox Superheater and Babcock & Wilcox Chain Grate Stoker.

The boilers are suspended front and rear from steel supporting frames, independent of brickwork. Patent dusting doors permit keeping all heating surfaces free from soot and dust. Large doors in the sides of the setting give access to all parts.

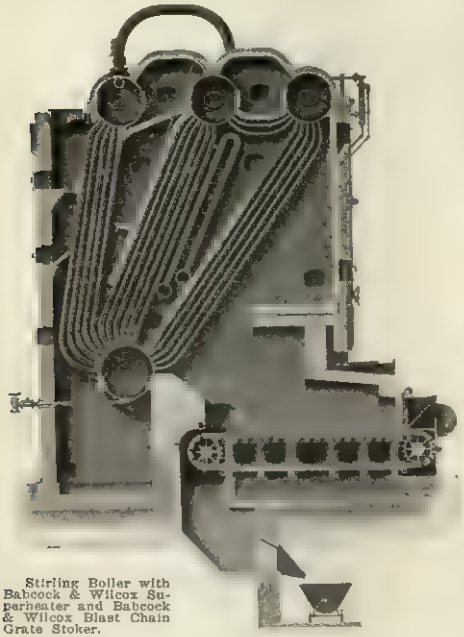
Stirling Boiler

The Stirling Boiler consists of three transverse steam and water drums set parallel and connected to the mud drum by three banks of water tubes curved to enter the drums radially. The center drum is connected to the front and rear drums by steam circulating tubes and to the front drum by water circulating tubes. Any tube can be removed without disturbing any other tube or the brickwork.

The furnace is formed by a firebrick arch sprung across the setting in the space between the front wall and front bank of tubes. This furnace is adapted to any stoker and for burning any class

of fuel. Gases of combustion are led from the furnace over the heating surface by a baffle resting on the rear tubes of the front bank and one on the rear tubes of the second bank.

The boiler is supported on a steel framework entirely independent of the brickwork setting. Large cleaning doors in the sides of the setting give ready access to all portions for cleaning, inspection and repair.



Stirling Boiler with Babcock & Wilcox Superheater and Babcock & Wilcox Blast Chain Grate Stoker.

Rust Boiler

The Rust Boiler has two transverse steam and water drums and two transverse mud drums. Each steam drum is connected to the mud drum below it by five rows of straight tubes and one row of curved tubes. The steam drums are connected by steam and water circulating tubes and the mud drums by water circulating tubes.

The tube sheets of all drums are pressed to form individual tube seats, thus permitting straight tubes to be expanded directly into cylindrical drums.

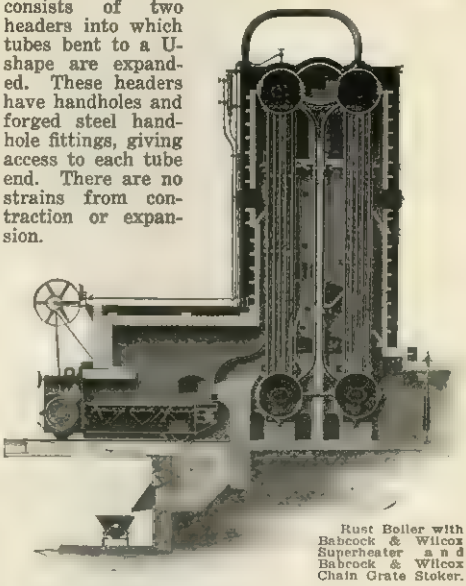
The tubes are staggered and so arranged that any tube may be removed without disturbing any other tube or the boiler brickwork.

The furnace is of the extension or Dutch oven type and any type of stoker or fuel can be used.

The gases are caused to make two passes over the heating surfaces by a vertical fire brick baffle, built between, and held in placed by, the central curved tubes. Horizontal baffle shelves cause all portions of the heating surface to be swept by the gases. The boiler is supported entirely free of the brickwork on cast iron saddles under the mud drums, the saddles resting on masonry foundations.

Babcock & Wilcox Steam Superheater

Built for installation in all types of boilers built by The Babcock & Wilcox Company and similar in design, location and operation. The superheater consists of two headers into which tubes bent to a U-shape are expanded. These headers have handholes and forged steel handhole fittings, giving access to each tube end. There are no strains from contraction or expansion.



Rust Boiler with Babcock & Wilcox Superheater and Babcock & Wilcox Chain Grate Stoker.

The superheater is located in all cases in the direct path of the products of combustion. The surfaces presented to the gases are smooth, offer minimum resistance to the passage of gases and the least opportunity for the adhesion of dust.

Steam is taken from the dry pipe, introduced into the intake header and passes through the superheater tubes to the outlet header, to which the superheated steam connection from the boiler is made.

Babcock & Wilcox Chain Grate Stoker

This consists of a grate in the form of an endless chain passing at the front and rear of the furnace over sprockets keyed to shafts carried by the stoker frame. The grate passes through the furnace continuously. The stoker is driven through a worm wheel on the front sprocket shaft and fuel is fed uniformly to the front of the grate under an adjustable stoker gate. Volatile gases are driven off on the forward portion of the grate under an ignition arch and are consumed in passing over the incandescent fuel before striking the heating surface. Ash and refuse are discharged as the grate turns over the rear sprocket. The form of the grate links allows proper admission of air for combustion. Suitable side seals and a bridge wall water box (connected into the water circulation of the boiler) prevent the admission of large quantities of excess air.

Catalogues may be obtained from any branch office.

Gold Plated Cameo Brooches

Leaders in Their Line for Quality and Prices

No. 35J50. Gold plated, rose finish, embossed design, pink and white cameo. Per dozen..... **1.00**

No. 35J75. Gold plated, rose finish, open work, embossed design, large size, pink and white cameo. Per dozen..... **1.25**

No. 35J76. Gold plated, rose finish, embossed design, large size pink and white cameo. Per dozen..... **1.25**

No. 35J1. Gold plated, rose finish, fancy embossed design, pink and white cameo. Per dozen. **1.50**

No. 35J3. Gold plated, rose finish, fancy mounting, large size, pink and white cameo. Per dozen..... **1.50**

No. 35J8. Gold plated, rose finish, fancy mounting, large size, pink and white cameo. Per dozen..... **3.75**

No. 35J4. Gold plated, rose finish, fancy open work border, large size, pink and white cameo. Per dozen..... **3.25**

No. 35J200. Gold plated, English finish, fancy open border, surrounded with pearls with large pink and white cameo. Per dozen..... **3.75**

No. 35J6. Gold plated, rose finish, fancy open border, large fine cut pink and white cameo. Per dozen..... **4.00**

Gold Plated Cameo Brooch Assortment

No. 35J10. Gold plated, rose finish, 12 assorted patterns, fancy open work border. Twelve on fancy display card. Per dozen..... **3.75**

16.50 PER DOZEN

Genuine Cameo Brooches

16.50 PER DOZEN

Formerly Sold from 36.00 to 48.00 per Dozen

The Cameo Brooches illustrated on this page comprise manufacturer's line of discontinued numbers of high-grade, genuine Cameos of Pink and White color, also Cornelians, artistically hand carved, made of gold filled stock, patent catch to prevent losing.

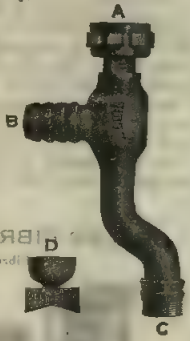
No. 37J10. Cameo Brooch Assortment. Shown above. Comprises Cameos from one inch to two inches in size. Finest gold filled stock. Guaranteed to keep its color and give entire satisfaction. We will be unable to fill any orders after this stock is exhausted, so order early.

Per Dozen . . . 16.50

WASHING MACHINE EJECTORS

Penberthy.

Designed to transfer water or other liquids from pumps, washing machines, wash tubs, cellar pits, or any place where there is an accumulation, by means of ordinary water pressure. No electrical, steam or other operative power required. It takes the maximum amount of water from the tub, with the minimum amount of water operating the ejector. A great labor saver. Can be used for any number of purposes. Very simple in construction; has no moving parts to get out of order or be adjusted. Fits any threaded faucet. Made of aluminum.



Penberthy — Weight, 4 ounces. Each.....$3.50

Loose Stock.

ADAPTERS

If faucet is smooth you can convert it into a threaded faucet in a few seconds by using a Penberthy adapter. Converts ⅜, ½, ⅝, and ¾-inch smooth faucets into standard threaded faucets in a few seconds. Made of polished brass.

Penberthy — Weight, 2 ounces. Each $0.50

Loose Stock.

CLOTHES WASHERS

King Air Force.

Washer is fitted with a patented, self-closing air valve, which opens on the upward stroke causing the suction and closes on the downward stroke, forcing the air and water through five perfectly-working tube flushers, forcing the suds through the clothes taking the dirt along without the least injury to the most delicate laces or the heaviest woolens. The King washer is hand made of 2X charcoal tin plate and is absolutely guaranteed. Complete with 30-inch handle.

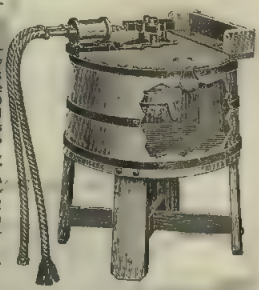
King—Weight, per dozen, 21 lbs. Per dozen....$18.50

WASHING MACHINES

IMPROVED WATER MOTOR

Capital

Let the Water Pressure in Your Home Do the Work.



Guaranteed to operate successfully and to do the work thoroughly if the water pressure is 20 pounds or over. All that is necessary is to fasten the hose to the water faucet, turn on the water and the motor does the work. The labor and time saved alone are worth the price of the machine.

The Safety Dasher Prevents the Tearing of the Clothes.

The finest fabrics may be washed without injury. Polished brass motor which is rust-proof. No danger of sand holes like the cast painted motor. Large size roller at back of gear rack, which is concaved on top to hold the oil, no danger of gear rack getting bent out of shape, as on the old style, and besides causing the motor to work easily and quickly.

Extra Fine, Large Tub.

Made of everlasting Louisiana red cypress, extra large size with stave legs, nicely varnished, gold bronze hoops and trimmings.

Intake pipe has a strainer on the end which prevents any foreign substance entering the motor.

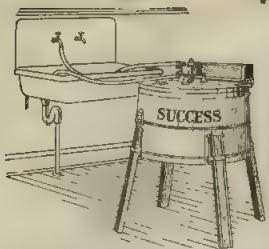
Poppet valves are used instead of sliding valves, and the longer they are operated the tighter they become, thus saving power and consequently becoming stronger instead of weaker. Sliding valves start to wear as soon as they are used, due to the friction that is on them. Therefore they soon start to leak and their power is quickly lost.

Poppet valves act very quickly and take less power than sliding valves. Poppet valves are easily replaced. It is almost impossible for any ordinary person, not accustomed to mechanics, to replace a sliding valve. All high grade engines are made with poppet valves, and incidentally the highest priced and best selling motor on the market today is constructed in exactly the same way. Years ago sliding valves were used, but now all high grade engines are constructed with poppet valves. The sliding valves will sooner or later give you trouble.

Capital—Weight, each, about 80 lbs. Each.....$27.00

One in a crate.

WASHING MACHINES



Water Power.

Success Gearless.

The Success rotary gearless motor washing machine is just what the name implies, and more to the merchant handling it, because the simplicity of the motor makes it unnecessary to carry any repair parts. There is nothing to get out of order and nothing to wear out. There are no springs on the valves. The entire motor is made of brass and the valves are both embodied in one small bronze casting which is secured to the cylinder of the motor by two nickel-plated nuts and can be removed easily when desired. Will operate on a lower water pressure than any other water motor in existence. The tub is designed to meet every requirement from the salesroom to the laundry and is attractive in appearance as well as perfection in operation.

Success—Weight, each, 65 pounds. Each.....$27.00

Dexter-Mazda

Suction Vacuum. It Pulls the Dirt.

Draws the dirt from soiled clothes easily and quickly without injury to the finest fabric. On its down stroke, the plunger forces warm air and suds under high pressure through the garments in the tub. On its upward stroke it exerts a powerful vacuum suction effect which loosens every atom of dirt and removes it from the cloth. See small illustration of vacuum at top of tub. It is light running, has correct speed, powerful leverage and is fully warranted.

Tub and frame are made of quarter-sawed cypress; plunger and all metal parts inside the tub are galvanized iron. Metal parts of the mechanism which are subject to strain are made of malleable iron or steel; plunger post is seamless steel tubing; weight of fly wheel carried on ball bearings. Machine cut gears, spiral pattern, very smooth in operation and practically noiseless. Frame securely braced.

Dexter-Mazda—Shipping weight, each, 90 pounds. Each $23.50

One in a crate.

WASHING MACHINE MOTORS

These motors are sold separately to enable the owners of any hand power rotary washing machine with a round tub to convert their machine into an up-to-date water motor washer by simply removing the hand power mechanism and attaching the motor instead. The motors come all assembled complete as shown and all the labor necessary to attach them to the cover of the old tub is to drive out the taper pin that holds the dasher collar to the motor shaft, place the motor in position on top, bore three holes though cover large enough to admit the bolts, and after screwing the nuts of these three bolts in place to make the motor secure replace the dasher on the motor shaft, drive the taper pin back in place and the machine is all ready for business.

Success—(Same as used on Success washing machines) complete except tub. Each.....$20.00

SPLIT PHASE MOTORS.

Type "SP"—Clutchless—Invincible.

The characteristics of these motors are well balanced, no one characteristic being over-developed at the expense of another. The static or initial starting torque will be not less than 135% of full load running torque, varying with the speed and frequency for which the motor is designed. They will all develop a maximum running torque of approximately 200% of full load torque. The starting (75% of static or locked rotor) current at normal voltage will not exceed 600% of full load current. Operating continuously under full load in a room of ordinary temperature and ventilation, the temperature rise will not exceed 40 degrees centigrade. The phase cut-out is positive, quick-acting, substantial and provided with silver contact to insure long life. All metal parts subject to rust, which when rusted might be the cause of failure to function, are treated by the "Parker Process" of rust-proofing. The winding of these motors is treated with insulating varnishes and baked, to an extent that insure freedom from troubles due to moisture.

60 Cycles.

‡**Frame No. S5B**—⅛ Horse Power; approximate speed at full load, 1750; allowance when base is not required, $0.55; allowance when pulley is not required, $0.55; diameter of standard pulley, 2 inches; face of standard pulley, 2 inches; bore of standard pulley, ½ inch; approximate amperes at full load at 110 volts, 3.4; approximate weight, 26 pounds. Each (bare motor only).....$15.60

‡**Frame No. S8B**—¼ Horse Power; approximate speed at full load, 1750; allowance when base is not required, $0.50; allowance when pulley is not required. $0.80; diameter of standard [illegible] inches; face of standard pulley, 2 inches; [illegible]ch; approximate amperes [illegible]roximate weight, 34 po[illegible] $6.45

The Electric Railway Equipment Co.

General Offices and Factory: CINCINNATI, OHIO

Factory Representatives:

PENNSYLVANIA AND OHIO—Cooke-Wilson Electric Supply Company, Pittsburgh, Pa., and Athens, Ohio.
WEST VIRGINIA—Cooke-Wilson Electric Supply Co. Charleston, W. Va.
NEW YORK CITY—The Electric Railway Equipment Co., 30 Church Street.
ST. LOUIS, MO.—Wood and Lane Company.
DENVER, COLO.—O. H. Davidson Equipment Company.

Agent Jobbers:

BIRMINGHAM, ALA.—J. T. Sudduth.
BLUEFIELD, W VA.—Bluefield Hardware Company.
CHICAGO, ILL.—Henderson & Co.
COLUMBUS, OHIO—Sackett Mine Supply Company.
HAZARD, KY.—The Virginia Supply Co.
KNOXVILLE, TENN.—C. M. McClung & Company.
MIDDLESBORO, KY.—Kentucky Mine Supply Co.
LOGAN, W. VA.—The Miller Hardware & Supply Co.

Products

Trolley Clamps; Mine Hangers; Section Insulators; Trolley Frogs; K-I Trolley Splicers; Clark Splicers; Trolley Wheels; Trolley Harps; Trolley Wheel Bushings; Line Section Switches; Insulated Turnbuckles; Expansion Bolts; Bonding Sleeves; Strain Insulators; Cross-overs; Trolley Brackets.

We manufacture a complete line of overhead trolley material for mine use.

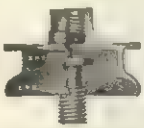
Hangers

Below we illustrate some of our hangers and give brief descriptions.

Type SM—Form 1

An exceptionally short hanger, recommended for mines having low roofs. Attached to timbers by two lag screws. Lugs extend sufficient distance beyond body to permit use of wrench on screw heads.

Type SM—Form 1 Hanger



Type SM—Form 2 Hanger

Form 2

Has same general dimensions as Form 1, but is designed to be attached direct to mine roof by expansion bolt. Tapped boss of hanger has same outside dimension as expansion bolt shell, permitting hanger flange to be drawn up securely against mine roof.

Type LF—Form 1

Designed for attachment to mine timbers by lag screws. Especially suitable for mines using 500 volt trolley service, and where atmospheric conditions are bad.

Type LF—Form 1 Hanger

Type LF—Form 2 Hanger

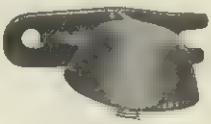
Form 2

For attachment to roof by expansion bolt. Stud bolt is effectively insulated from hanger shell by Ereco Insulation. Each hanger is tested to 5000 volts before shipment.

Type BD Hanger—Form 2

This hanger can be attached to mine roof by expansion bolt, or lag screw and wood plug. Has large hex. shoulder for wrench.

Type BD—Form 2 Hanger



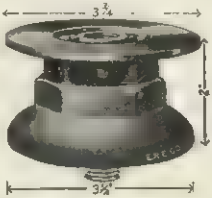
Type BD—Form 6 Hanger

Form 6

For use in low vein mines where roof timbers are used. Can be attached to side of timbers by lag screws, permitting trolley wire to be mounted several inches higher than with other types.

Combination Mine Hanger

Form 5 Hanger can be used equally well for attachment to either mine roof or roof timber, as the tapped boss does not extend above the surface of hanger. Requires but one hanger screw for attaching to timber, and can be installed in much less time than hangers using two screws.



Combination Hanger—Form 5

The top, having no projecting boss, gives wide bearing surface to resist strains, especially on curve construction.

For attaching to roof timber use special lag screws; for attaching to mine roof use expansion bolt.

Expansion Bolt

Expansion Bolt

This expansion bolt is adapted for use with any hanger having boss tapped for ⅝" bolt. It con-

sists of a malleable iron shell, a ⅝" threaded stud extending through the shell, and a tapped conical nut. It is the approved device for attaching any hanger direct to mine roof.

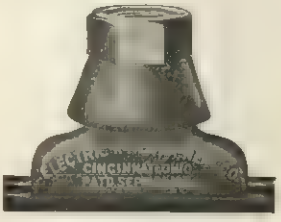
Lag Screw and Wood Plug

Can be used instead of Expansion Bolt if desired, for attaching any type Hanger to mine roof.

Lag Screw Wood Plug

For supporting Form 5 or Combination type hangers from mine timbers, lag screw only is required.

Lag screws are ⅝" x 4", black or galvanized; wood plugs 1½" x 3".



Sure Grip Trolley Clamp

Sure Grip Trolley Clamp

A mechanical clamp for supporting the trolley wire from any type of insulated hanger.

Turning the large nut with a wrench attaches the clamp to hanger, and at the same time automatically forces down the compression cup, which draws the jaws together with the grip of a vise. No detachable parts to get lost; no threads exposed to mine air. It is unbreakable, easily and quickly put on and taken off, and can be used over and over.

OVER TWO MILLIONS IN USE.

Feeder Wire Supporting Clamp
Malleable Iron

An improved form of a cable suspending clamp, having one clamp jaw cast solid with the supporting boss. This insures a rigid suspension and permits cable to be pulled through clamp without undue binding. The other clamp jaw is hinged, but opens only a limited distance; this feature allows the cable to be set in clamp without necessity of locking movable plate, until full length of cable has been suspended. Length 3 inches. Height 3¾ inches. Furnished for any size cable and used with any standard mine hanger.

Splicers

Elreco Clark Splicer

Made in 10"—12" and 15" lengths with or without boss.

K-1 Splicers

Lengths from 8" to 15" furnished for Round, Figure 8 or Grooved Wire.

Miami Type Section Insulator

We manufacture three types of these insulators, with and without the switch.

Miami Section Insulator

These insulators have renewable wood runner, which is treated in oil and not affected by moisture in mines. Rotating boss permits insulator to be attached to solid stud mine hanger, without removing hanger from mine roof. Copper switch blade and lugs have current carrying capacity equal to 4-0 wire.

This device should be installed on all branch trolley circuits, as it permits current being cut off trolley wire where locomotive is not operating.

Trolley Frog

Made of bronze metal or malleable iron, designed

Trolley Frog

especially for mine service. Swing out plates permit easy attachment to trolley wire.

Elreco Trolley Harp

This is an ideal harp for mine use.

Provision is made for taking up all wear between harp and pole socket, without the necessity of adding washers. This adjustment insures good bearing at all times, between harp and socket, preventing excessive wear at this point, and can be made, as occasion demands, until the harp is discarded.

FRICK AND LINDSAY COMPANY

TELEPHONE 5700 CEDAR PITTSBURGH, PA. P. & A. TELEPHONE 700 NORTH

"Superior" Brass Mine Car Oil Gun.

A 1300 Page Illustrated Catalogue of Mine Supplies and Specialties

Sent to Old or New Customers

Tormay Pit Car Oiler.

Superior and Pyrene Fire Extinguishers. Fire Protection Devices.

Yale & Towne Chain Blocks. Brown Hoist Trolleys.

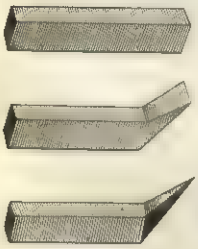
Tackle Blocks for Wire and Manila Rope.

Labor-Saving Equipment.

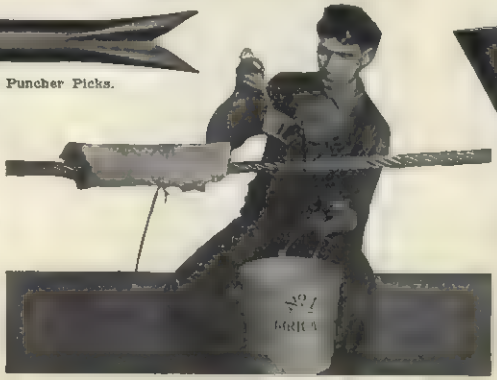
Pittsburgh Branch John A. Roebling's Sons Company—Wire and Wire Rope, Etc.

Famous Whitlock Rope—Pure, Select Manila.

Mining Machine Puncher Picks.



Mining Machine Bits, Plain, Chisel Point and Pick Point—Ups, Downs, Straights—All Sizes.



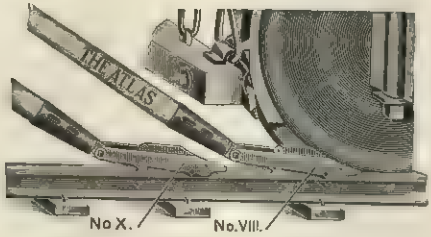
Wire Rope Lubricant—Scientific, efficient and safe. Used by the leading wire rope manufacturers and industrial concerns.

Superior Sand Dryers—Made With or Without Gratings.

H. K. Wood's Mo-lyb-den-um. Shovels

IXL Safety Ratchet HOPPER-CAR WRENCH.

A safety, time and labor-saving device.

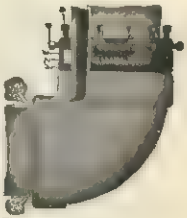


Atlas, and Samson Car Movers, Car Replacers and Other Railroad Specialties.

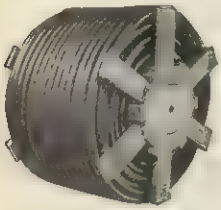
Superior Roofing. Standard Roofing.

Duff Jacks. Simplex Jacks.

High-Grade Babbitts a Specialty—"Superior" and "Frick" Brands. This Company owns three standard formulae and our metals are produced for us exclusively by one of the country's leading experts. These metals are of high intrinsic value and sell at equitable prices based on the market.



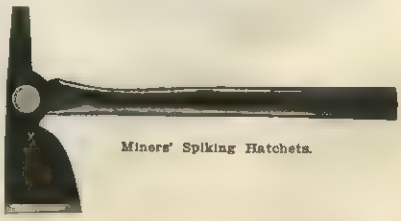
Yarway (Simplex) Leak Repair Clamps.



Air Machine, Steam and Water Hose.

Malleable Steam and Air Machine Hose Couplings.

Packings of Every Description, a Specialty.



Miners' Spiking Hatchets.

No. 36—2 Light—Roman gold finish. Height, 22 inches. Shade 18 inches. Glass shade hand painted scenic design in harmonious composition tinted in reds, blues and yellow. Silk cord and 2 piece plug. Each.....$60.00

No. 31—2 Light—Black and gold finish. Height, 23 inches. Shade 18 inches. Glass shade hand painted design solid black silhouetted against a sunset sky of vivid red and orang. Silk cord and 2 piece plug. Each.....$52.00

No. 14—2 Light—Roman gold and polychrome finish. Height 22 inches. Shade 16 inches. Glass shade hand painted water scene with dark hills in distance against a sunset sky. Foreground foliage in green and brown. Silk cord and 2 piece plug. Each.....$36.00

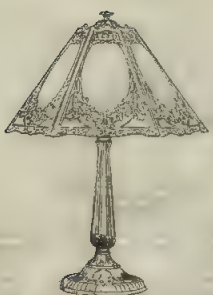
No. 11—2 Light—Roman gold finish. Height 22 inches. Shade 16 inches. Glass shade hand painted rural scenic decorations in various tints of red and yellow. Silk cord and 2 piece plug. Each.....$36.00

TABLE LAMPS

No. 783-883¼—2 Light—Dobre grey finish. Height over all 22¾ inches. Shade 18½ inches in diameter. Amber opalescent glass panels. Pull chain sockets. Six foot silk cord and 2 piece plug. Each.....$26.00

No. 782-825¼—2 Lights—Antique bronze finish. Height over all 21⅛ inches. Shade 16 inches in diameter. Amber opalescent glass panels. Pull chain sockets. Six foot silk cord and 2 piece plug. Each.....$24.00

No. 784-514—2 Lights—Antique bronze finish. Height over all 23½ inches. Shade 18 inches in diameter. Amber opalescent glass panels. Pull chain sockets. Six foot cord and 2 piece plug. Each.....$27.00



No. 780-802—2 Lights—Antique green finish. Height over all 22⅛ inches. Shade 16 inches in diameter. Amber opalescent glass panels. Six foot silk cord and 2 piece plug. Each.....$19.00

No. 781-504—2 Lights—Antique bronze finish. Height over all 22⅛ inches. Shade 17⅛ inches in diameter. Amber opalescent glass panels. Six foot silk cord and 2 piece plug. Each.....$22.00

Horton Home Ironer No. 20 with roll from EVERY THING perfect.

Horton No. 40 the original 3-cup Electric Suction Washer

Horton Electric No. 33 The dolly type washer

Horton Miracle Washer No. 22 Hand Operated.

Horton "Peerless Washer No. 30 Water Power.

Co-operation—

the kind that is human—that grows and grows——

THERE are two kinds of co-operation. One is forced and for that reason is half-hearted, cold, unresponsive. The other is of the human kind—*real co-operation*—born of the spirit of service. It is warm, cordial and friendly.

Real co-operation grows When all are imbued with it, from general manager to office boy, the organization as a whole progresses, through promoting the customer's interest.

Here at Horton, such a spirit of service *lives*. Every factory man who turns a wheel or tightens a bolt has this desire to serve well—to build well. It is the reason for the goodness of Horton Washers and Ironers.

It is why our jobbers, distributors and dealers are successful. They have felt the effects of the Horton spirit of service and themselves have been enthusiastic co-operants.

The letter, here shown, from the Salt Lake Hardware Company, is evidence that co-operation of the human kind grows and guarantees success. Letters such as this are not unusual with us and they always stress the satisfaction of their Horton connection.

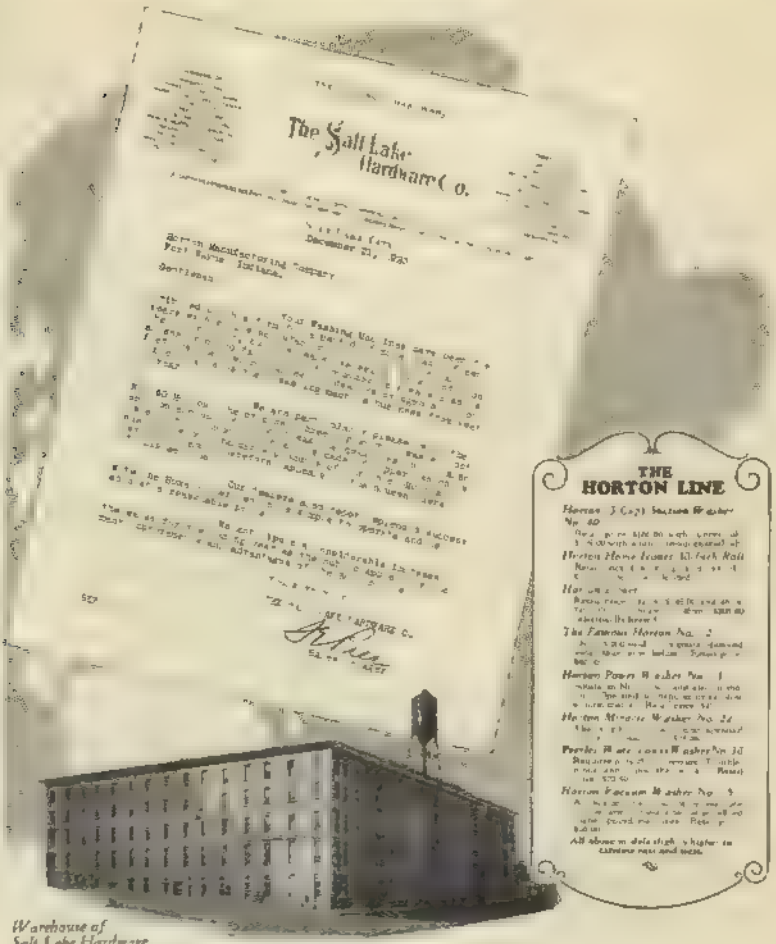
Are you interested in a mutually friendly business relationship of this kind and the many advantages it offers? We'll welcome the opportunity to tell you more.

HORTON MANUFACTURING COMPANY
1908 Fry Street Fort Wayne, Indiana

ELECTRIC WASHERS
Pioneers for 50 Years

Horton

AND IRONERS
Fort Wayne, Ind.



Warehouse of Salt Lake Hardware Company at Salt Lake City Utah. A similar warehouse is located at Pocatello, Idaho

HORTON covers your entire market on Washing Machines and Ironers. There's a Horton Washer or Ironer—in the right size—the right type—and at the right price — to meet every requirement. You need never miss a sale with the Horton line

ELECTRIC WASHERS *Pioneers for 50 Years*

Horton

AND IRONERS *Fort Wayne Ind.*

Say you saw it in GOOD HARDWARE

HARMONICAS

POHL'S, "MY PAL"

A well constructed instrument of neat appearance and perfectly tuned. Finely nickel-plated covers. Brassed plates. Each packed in a light cardboard container.

Per dozen

No. 112—4 in. long; 10 single holes; 10 reeds; wt. per dozen 1¼ lbs. $1.20

Finely nickel plated covers. Brassed plates. Each packed in a telescope container.

Per dozen

No. K1—10 single holes; 20 reeds; wt. per dozen 1¼ lbs. $1.80

One in a box

AMERICAN ACE ASSORTMENTS

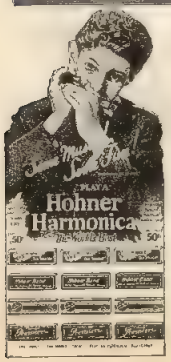
Finely nickel plated covers with open back. Every harmonica is warranted of uniform tune, having 10 single holes and 20 reeds Brassed plates Each packed in an extra heavy telescope box of different colors, with pictorial design.

Retails 25 cts. each

Per assortment

No. 016—Consists of 12 harmonicas in a display box; wt. per assortment 3½ lbs. $3.00

One assortment in a box.



HOHNER BOY ASSORTMENTS

Finely nickel plated covers. Brassed plates.

Complete with a permanent display stand, lithographed in eight colors and stand 31 inches high and is 15 inches wide

Retails 50 cts. each

Per assortment

No. 425—Consists of 12 harmonicas, three each of No. 34B, 132, 180 and 35; wt. per assortment 3⅝ lbs.....$6.00

HARMONICAS

ASSORTMENTS

On Stand

A beautiful revolving display stand, in the form of an obelisk

Made of thoroughly seasoned wood of ⅝ inch thickness, finished in rich, dark mahogany highly polished.

In the base compartment is a well constructed motor that revolves the obelisk for 3½ hours with one winding. Neatly decorated with attractive silver pressings and stenciled with number and retail price of the harmonicas.

Retails 50 cts. to $2.00 each.

Per assortment

No. 600—Consists of 36 genuine Hohner harmonicas in the keys of A, B, C, D, E, F and G; complete with stand; wt. each 56 lbs. $28.40

One assortment in a box.

In Box

Beautiful and durable collapsible wooden display case. Finished in light oak.

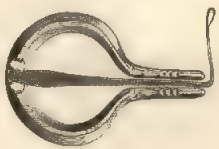
Retails 10 to 60 cts. each

Per assortment

No. 700—Consists of 78 standard harmonicas; 2 each of Nos. 34B, 50B, and 132; 6 of No. 185; 12 of No. 06; 15 each of Nos 160 and 161; 24 of No. 165; complete with display box; wt per assortment 12½ lbs. $16.20

One assortment in a box.

JEW HARPS



IRON

Per dozen

No. 019—2½ in. long $1.20

BRASS

Per dozen

No. 21B 2¾ in long $1.80

Three dozen in a box.

HARMONICAS

HOHNER'S, "GOLIATH"

Very beautiful large size Tremolo harmonica. Heavy convex covers nickel plated with open back. Double holes. Brass plates.

Each instrument is packed in a heavy wooden case covered with imitation alligator skin. Per dozen

No. 458—7½ in. long; 24 double holes; 48 reeds; wt. per dozen 4⅝ lbs. $24.00

One in a box.

HOHNER'S, "UP-TO-DATE"

An instrument of exceptional merit and concert size. Brass plates. Finely nickel-plated convex covered with open back. Each padded in a wood case. Per dozen

No. 1896½—4⅝ in. long; 10 double holes; 20 reeds, wt. per dozen 3½ lbs. $12 00

One in a box.

HOHNER'S, "MARINE BAND"

This harmonica has a much larger range than the ordinary single hole instrument, 3 octaves, and it is the choice of many players. Highly nickel plated covers. Brass plates. Single holes. Each packed in an attractive hinged box. Per dozen

No. 365—6¼ in. long; 14 single holes; 28 reeds; wt. per dozen 4⅝ lbs. $9.00

One in a box

The instrument with a national reputation. Heavy convex nickel covers with open back. Brass plates. Single holes Each packed in a fancy hinged box. Per dozen

No. 1896—4 in. long; 10 single holes; 20 reeds; wt. per dozen 2 lbs. $6.00

One in a box

HARMONICAS

HOTZ, "BAND"

This instrument has a much larger range than the ordinary single hole harmonicas, 3 octaves, and it is the choice of many players. Nickel-plated covers with open back. Brassed plates. Each packed in a telescope box. Per dozen

No. 044—6¼ in. long; 14 single holes; 28 reeds; wt. per dozen 4⅞ lbs. $5.00

One in a box

HOHNER'S, "OLD STANDBY"

Guaranteed first class in every respect. Finely nickel-plated covers. Brass plates. Single holes. Each packed in a neat hinged box.

Per dozen

No. 34B—4 in. long; 10 single holes; 20 reeds; wt. per dozen 1¾ lbs. $6.00

One in a box

HOTZ, "ATTA BOY"

This instrument will answer the exacting needs of the professional and expert player. Guaranteed perfect in tune Finely nickel plated covers covers with open back. Brassed plates. Single holes. Each packed in hinged carton, handsomely labeled.

Per dozen

No. 06—4 in. long; 10 single holes; 20 reeds; wt. per dozen 1⅛ lbs. $3.00

One in a box

HOTZ, "AMERICAN ACE"

The harmonica is perfect in tune and very popular. Finely nickel plated covers. Brassed plates. Single holes. Each packed in a durable telescope box with pictorial design in colors.

Per dozen

No. 02—4 in. long; 10 single holes; 20 reeds; wt per dozen 1⅛ lbs. $3.00

One in a box

Mancha Storage Battery Locomotive Co.

ST. LOUIS, MO.

Representatives in
Pittsburgh, Pa. Huntington, W. Va.
Columbus, Ohio Denver, Colo.
Baltimore, Md. Grove City, Pa.
Minneapolis, Minn New York, N. Y.
Salt Lake City, Utah St. Louis, Mo.
Birmingham, Ala.

Manufacturers of

Storage Battery Locomotives

"Mancha's Electric Mule"

(REG. U. S. PAT. OFF.)

Representatives in
San Francisco, Seattle, Wash., El Paso, Texas, Spokane, Butte, Mon., Portland, Ore., Toronto, Ont., Can., Edmonton, Alberta, Can., Calgary, Alberta, Can., Vancouver, B. C., Can., Christiania, Norway; Tokyo, Japan, London, England.

The Problem That Confronts the Operator Today is to Pay the Wage Scale and Make Money at Present Coal Prices.

This is difficult to accomplish with antiquated mining methods.

Mechanical equipment reduces the number of men employed and the increased tonnage per man enables the operator to produce at a profit.

Mancha engineers have perfected a Power Tank which supplies full voltage constantly at the face of operations to cutting machines, loading machines, pumps, and to other motor operated machines.

The Power Tank eliminates exposed wires and saves about $4,000.00 per mile for stringing wires and bonding rails.

The Power Tank has furnished ample capacity to cut two eight-hour shifts on one charge.

We are pioneers in the manufacture of Power Tanks and have had them in use for over a year. They have passed the experimental stage and have enabled cutting machines to double the tonnage per machine.

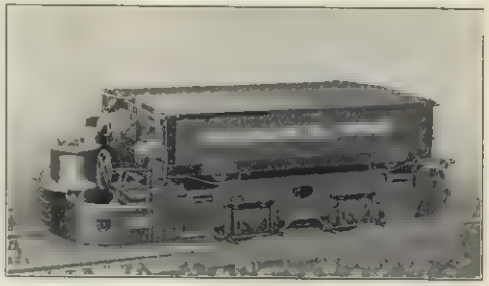
Insomuch as there are many gaseous mines, we have made our storage battery locomotives and Power Tanks flame-proof, Permissible Equipment, bearing the Permissible Plate issued by the Bureau of Mines.

Mancha's is the only PERMISSIBLE POWER TANK manufactured today.

The operator who will eliminate the expense of wires, bonding of rails, and the peak load charge he must pay for his electricity and operate his cutting and loading machines by means of power tanks and gather and haul his coal with storage battery locomotives, can produce his coal at a substantial profit on the basis of present coal prices and wages.

For mines that are not gaseous, we furnish this equipment non-flame proof.

Permissible Power Tank



Permissible Locomotive

SPECIFICATIONS NON-FLAME PROOF LOCOMOTIVES

	HIGH TYPE			LOW TYPE	
	Super Hercules	Hercules	Standard-A	Armored Tank	Whippet
Total Weight in Tons	8—10½	8—7½	4—5½	5—7	4—5½
Weight Chassis Pounds	11800	8500—9000	5900	8500—9000	6400—6900
Weight Maximum Battery	6160	6000	4501	4200	3960
Rated K W H Capacity	76—80	57—73	28—40	31—40	20—37
Wheel Base	44¾"	36¾"	31¾"	36¾"	29¾"
Length Over All	13' 9"	12' 1"	10' 9"	13' 4"	12' 0"
Height Chassis Only	21"	23⅝" — 25⅛"	22¾"	30"	30"
Height Over All	43" — 47"	47"	42¾" — 47⅛"	52"	39"
Height Draw Pockets	7½" — 22"	9" — 18"	6½" — 16"	8" — 19½"	6½" — 18"
Gauges Wheels Inside	36" — 48"	36" — 48"	18" — 34"	36" — 48"	36" — 48"
Gauges Wheels Outside	42" — 48"	36" — 48"	24" — 48"	40" — 48"	42" — 48"
Chassis Width Wheels Inside	58⅜" — 62⅜"	Ga. + 22½"	30½" — 50.6"	Ga. + 22"	Ga. + 19"
Chassis Width Wheels Outside	57"	Ga. + 8"	36½" — 54¾"	Ga. + 14"	Ga. + 6½"
Diameter of Wheels	18"	13"	16"	18"	12"
Radius Maximum Curve	13'-0"	12' 0"	10' 0"	12' 0"	10' 0"
Speed Miles Per Hour	3—7	3—7	3—7	3—7	3—7
Maximum Draw Bar Pull Pounds	5000	3750	2500	5000	2750

The above locomotives can be equipped with either Special Worm Drive or Triple Reduction Gear Drive.

PERMISSIBLE
STORAGE BATTERY LOCOMOTIVE
APPROVAL No. 1502
ISSUED TO THE
MANCHA STORAGE BATTERY LOCOMOTIVE CO.

CAUTION

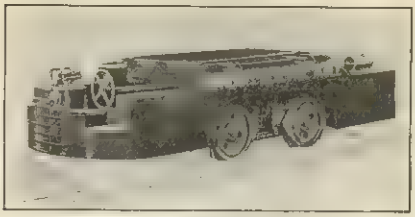
This locomotive is not permissible unless the battery box, motor, controller headlights, charging plug and two fuse and switch compartments are kept locked or effectively sealed. It is recommended that only one service key be available for unlocking such compartments and the key placed in the care of an authorized person.

This locomotive is not permissible unless the cover of the motor compartment, all other bolted covers and lead entrance glands are secure with all the parts properly in place. Bolts, nuts and gland nuts must be secured against loosening by lock washers, wiring through the heads, cotter pins, or other special means provided by the manufacturer.

This locomotive is not permissible unless the battery cells, battery connectors and the battery box are kept free from an accumulation of electrolyte, dust and dirt.

This locomotive is not permissible unless the armor covering the wiring, the fastenings at the end of the armor and the insulation of all connectors and wiring, including battery wiring and connectors, are kept in good repair. Special care should be taken to maintain the terminal connections with cables outside of permissible compartments against loosening.

The permissibility of this locomotive depends upon maintaining all parts in good repair.



Type, Armored Tank

Low seam coal is the field for this machine. It eliminates the necessity of brushing the top or taking up bottom to clear mules as it requires only thirty-three inches of height.

This locomotive will travel wherever a track is laid and is equally useful for gathering or main haulage work.

Trip rider room is provided.

Four substantial steel castings make up the frame and the batteries are absolutely safe from any and all injury due to collision or derailment.

The Mancha Battery Transfer Rack

(PATENTED)

By furnishing an additional battery and box the capacity of a locomotive or Power Tank is increased 100%.

The transfer is made in 3 minutes!

It is effected by means of an inclined plane. The battery furnishes the power. No manual labor required. No danger of injury to battery through jars or blows, the springs on the locomotive acting as cushions when battery box rolls back upon the chassis.

SALIENT advantages offered by this device:

1st. Ton miles DOUBLED.

2nd. Ability to provide AMPLE BATTERY CAPACITY through the use of 2 units where the restricted limitations of the entries prohibit the use of one large unit.

3rd. CONTINUOUS OPERATION — no longer any restrictions from battery capacity.

4th. Charge battery ANY TIME, night or day.

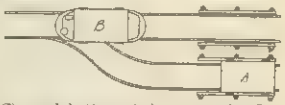
5th. ACCESSIBILITY provided to all parts of locomotive, allowing thorough inspection.

6th. The HEAVIEST BATTERY can be transferred as quickly and as easily as the lightest.

7th. Should distances increase requiring more battery, an additional battery will increase the tonnage without the expense of another locomotive and the additional labor cost of operating same.

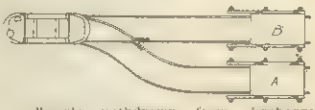
8th. Our Transfer Rack applied to your locomotives will solve any present deficiency of battery capacity.

9th. TWO TANKS OR LOCOMOTIVES IN ONE.



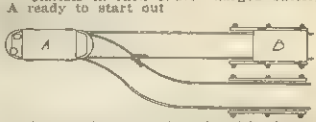
Charged battery A in one rack. Locomotive with discharged battery B entering other rack

Locomotive depositing discharged battery B on rack

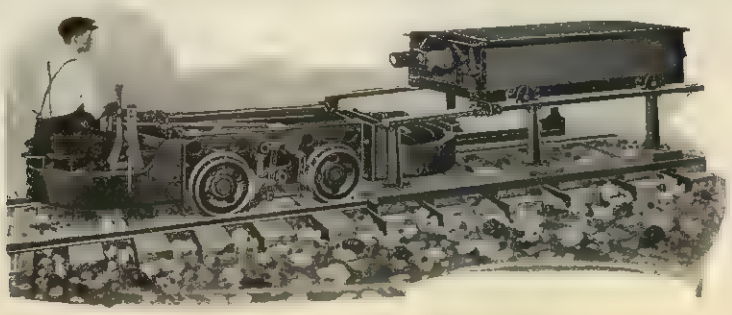


Chassis withdrawn from discharged battery B and ready to enter rack to receive charged battery A

Chassis in rack under charged battery A ready to start out



Locomotive out of rack with charged battery A. Discharged battery B remains in rack for charging.



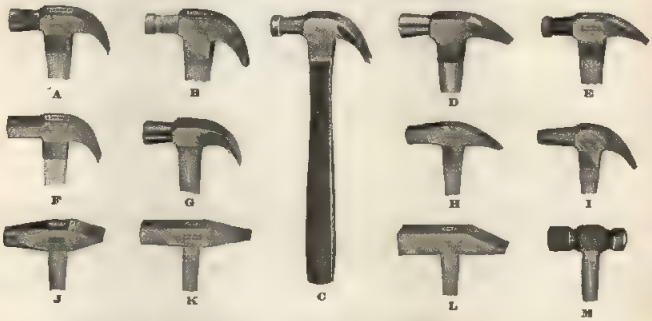
THE DAVID MAYDOLE HAMMER COMPANY
NORWICH, NEW YORK, U. S. A.

MAYDOLE HAMMERS

TRADE
D. MAYDOLE
MARK

ESTABLISHED IN 1843

Every Hammer Bearing the Imprint "D. MAYDOLE" Is Warranted First-Class in Every Respect



The Weights Given Below Are Exclusive of the Weights of the Handles

	Numbers	Weights in Ounces
A—Adze Eye Nail Hammers,	0, 1, 1½, 2, 3	26, 20, 16, 13, 7
B—Adze Eye Nail Hammers,	10, 11, 11½, 12, 12½, 13, 14	25, 19, 16, 12, 10, 7, 5
C—Adze Eye Nail Hammers,	611½, 612	16, 12
D—Adze Eye Nail Hammers,	701, 701½	20, 16
E—Adze Eye Nail Hammers,	711, 711½, 712	19, 16, 12
F—Adze Eye Nail Hammers,	200, 201, 201½, 202, 203	28, 22, 18, 14, 8
G—Joiners' Nail Hammers,	20, 21, 21½, 22, 23	24, 18, 15, 12, 7
H—Farriers' Adze Eye Driving Hammers,	152	10
I—Farriers' Adze Eye Driving Hammers,	251, 252, 253	12, 10, 8
J—Plain Eye Riveting Hammers,	40, 41, 42, 42½, 43, 44	24, 18, 13, 10, 7, 4
K—Tinners' Riveting Hammers,	293, 294, 295	16, 12, 8
L—Tinners' Setting Hammers,	303, 304, 305	16, 12, 8
M—Carriage Ironers' Hand Hammers,	1012, 1015	38, 24

HANDLED HAMMERS—For Carpenters, Machinists, Chauffeurs, Engineers, Riveters, Tinners, Carriage Ironers, Blacksmiths, Farriers, Patternmakers, Prospectors, Bricklayers, etc. Forged from High Grade Special Steel, and fitted with first class, thoroughly air-seasoned, second growth hickory handles, joined in the most satisfactory manner yet devised for lasting service. The faces and claws, or peins, are separately and differently tempered according to the work the hammers are to perform.

Maydole Hammers have been awarded highest honors at every exposition at which they have been exhibited.

THE DAVID MAYDOLE HAMMER COMPANY
NORWICH, N. Y., U. S. A.

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NORWICH, NEW YORK, U. S. A.

MAYDOLE HAMMERS

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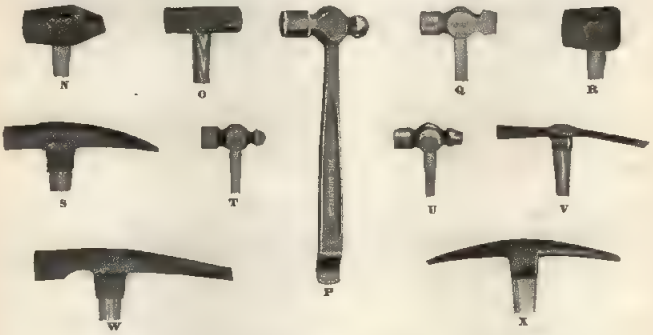
Every Hammer Bearing the Imprint "D. MAYDOLE" Is Warranted First-Class in Every Respect



The Weights Given Below Are Exclusive of the Weights of the Handles

	Numbers	Weights in Ounces
N—Blacksmiths' Hand Hammers,	761, 762	48, 42
O—Plow or Engineers' Hammers,	1663, 1664	48, 40
P—Chauffeurs' Combined Hammer and Tire Tool,	2173	20 (including handle)
Q—Machinists' Chipping Hammers,	100, 101, 102	28, 22, 18
R—Prospecting Hammers,	682	28
S—Adze Eye Prospecting Picks,	1482, 1483	24, 16
T—Machinists' Ball Pein Hammers,	70, 70½, 71, 72, 73, 74, 75, 76, 77, 78, 79, 79½, 79¾	18, 36, 30, 24, 20, 16, 13, 10, 7, 5, 3, 2, 1
U—Machinists' Cross Pein Hammers,	172, 173, 174	24, 20, 16
V—Patternmakers' Hammers,	935	5
W—Bricklayers' Adze Eye Hammers,	562, 563	30, 22
X—Bricklayers' Adze Eye Skutches,	2562, 2563	30, 22

The purpose of David Maydole, inventor of the Adze Eye Hammer and founder of the business, was to make the best Hammers possible and this is our purpose The universal demand for Maydole Hammers evidences the success of this principle of action These Hammers are found in the high grade hardware stores in all parts of the civilized world.

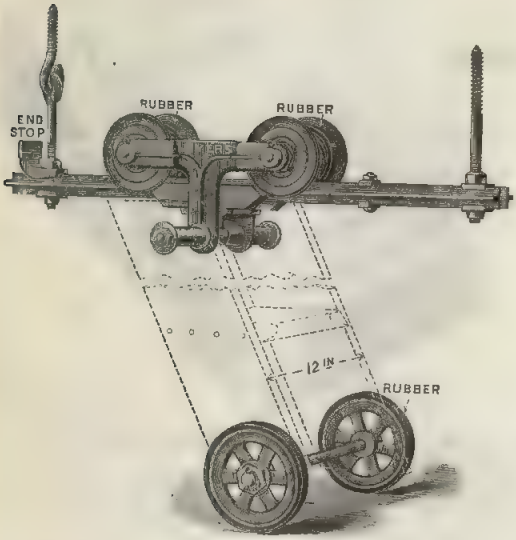
These pages do not show the complete line, but Catalog covering all patterns will be sent on request.

THE DAVID MAYDOLE HAMMER COMPANY
NORWICH, N. Y., U. S. A.

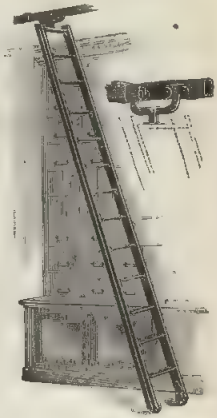
ROLLING LADDERS

For Store, Factory, Warehouse or Telephone Exchange

MYERS



COBURN



Nos. 9 and 9P.

Myers' Ceiling Ladders

The Track is our well known double angle steel rail, which is very neat and strong and is suspended from ceiling by means of lag screws, either jointed or rigid, or by flanged plates and wood screws. By this means the track is placed close to the ceiling and can be leveled on an uneven ceiling without the least trouble and without any blocking or bridging, as is the case in many other tracks.

The Ladder is constructed on the best clear Georgia pine, nicely finished, filled and varnished; has open panel sides. The width of the ladder is 12 inches.

The Trolley is self-adjusting, fitted with turned steel bearings and 3 inch anti-rattler wheels, turned and bored on lathe and fitted with **special rubber tires.**

The Floor Travelers are 5 inches in diameter, composed of metal sides with **rubber cushion tires** clamped in such a position as to be impossible to get off or come loose. These wheels are placed on a steel axle. With this style trolley, **which is noiseless,** we overcome a great objection in other ladders.

Ladder and Trolley—Complete as illustrated . . . . . Each, $24.00

Track with Hangers—Complete as illustrated . . . . . Per Foot, .34

Coburn Ceiling Ladders

This Ladder is recommended for use in hardware and other stores where heavy merchandise is to be handled. Width over all 13¾ inches, Iron Work is finished in Aluminum Bronze. No. 1 Trolley Track and brackets are used with this ladder. The track is regularly furnished in 4, 5 and 6 foot lengths, but can be furnished in any length up to 10 feet. Brackets should be spaced not over 6 feet apart. For plastered ceilings, ceiling strips should be used.

No. 9—Quartered Oak, complete . . . . . Each, $24.00

No. 9P—Hard Pine, complete . . . . . Each, 20.00

No. 1—Trolley Track, including Brackets . . . . . Per Foot, .30

No. 1C—Curved Track, including Brackets . . . . . Per Foot, 1.00

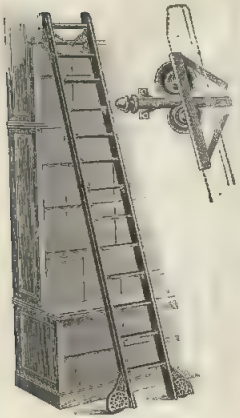
DIRECTIONS FOR ORDERING CEILING LADDERS

Give us the exact height of the ceiling and the length of each track, and we will do all the fitting at the factory. If the height of the ceiling varies, give us the height of ceiling at each end and center of each run of track.

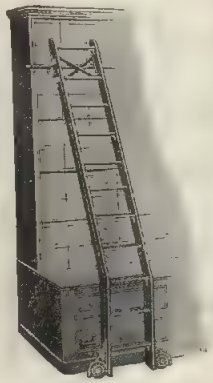
End View of Shelving.

COBURN ROLLING LADDERS

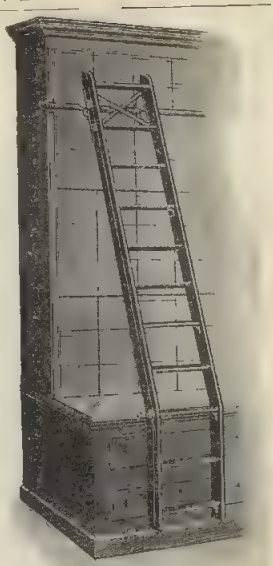
For Store, Factory, Warehouse or Telephone Exchange



Nos. 1 and 1P.



Nos. 3 and 3P.



Nos. 6 and 6P.

Coburn Shelf Ladders

These Ladders are invaluable for use in shoe stores and establishments of a like character The Nos 1 and 1 Series are 16 inches wide outside, with 3-inch sides and 4¼-inch treads Iron work is finished in Aluminum Bronze

Straight Ladders

No. 1—Quarter Oak, Complete	Each,	$22.00
No. 1P –Hard Pine, Complete	Each,	18.00
Wood Pole Track, Including Brackets	Per Foot,	.30

Bent Ladders

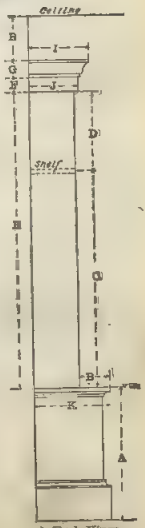
No. 3—Quartered Oak, Complete	Each,	$24.00
No. 3P—Hard Pine, Complete	Each,	20.00
Wood Pole Track, including Brackets	Per Foot,	.30

No. 6. Coburn Shelf Ladder

This style of Ladder is for use when it is desired to eliminate the track on the ledge, and the condition of the floor will not permit the ladder to operate freely It is necessary to use tubular iron track, which must be securely fastened preferably to the uprights, to secure sufficient strength.

Note.—If you order No. 6 style Ladder **we must have the exact distance from center to center of shelf uprights, also state width of same,** if the track brackets are to be attached to uprights.

No. 6—Quartered Oak, Complete with Wood Fender Rolls	Each,	$22.00
No. 6P—Hard Pine, Complete with Wood Fender Rolls	Each,	18.00
For Rubber Covered Fender Rolls. Add to above List		1.00
Tubular Iron Track, including Brackets	Per Foot,	.50



End View of Shelving.

Directions for Ordering Shelf Ladders

Order by number and Give Measurements A, B, C and D.

OXWELD ACETYLENE COMPANY

CHICAGO
3642 Jasper Place

LONG ISLAND CITY, N. Y.
Thompson Ave. & Orton St.

SAN FRANCISCO
1050 Mission St.

Oxweld

WELDING AND CUTTING APPARATUS

Oxweld Products

Oxweld Welding Equipment.
Oxweld Cutting Equipment.
Oxweld Lead Burning Equipment.
Oxweld Welding Rods and Fluxes.
Oxweld Low-Pressure Acetylene Generators.
Oxweld Portable Acetylene Generators.

The Oxweld Process

The Oxweld Process of welding and cutting metal by means of the oxy-acetylene flame affords the mine operator a simple and efficient means of making quick repairs. The average workman, after a little instruction, can use the process efficiently.

By the Oxweld Welding Process practically any metal can be welded. Oxygen and acetylene are combined in the Oxweld blowpipe to produce a small flame which is hotter than that produced by any other gaseous or solid fuel. This tremendous heat (6300 degrees, F.) brings the metal to be welded to a molten state, so that with filling material of the same kind as the metal worked upon, the whole can be welded into one continuous piece. Metals welded by this process possess practically the same strength as the original piece.

By the Oxweld Cutting Process wrought iron, cast iron, and all kinds of steels can be cut. The part to be cut is first heated by a flame of mixed oxygen and acetylene. Then a jet of oxygen is directed on the preheated portion which oxidizes so rapidly that it practically burns away. The result is a clean, narrow cut through the section, resembling the cut made by a saw.

Oxweld equipment includes all the necessary apparatus to perform every operation within the range of the Oxy-acetylene Process.

Applications of the Oxweld Process

WELDING—Boiler tubes; tube sheets; flues and seams; fire doors; cracked cylinders, pistons, valve chests; pump castings broken in service; reclaiming flywheels and gears; superheater lines; receivers; connections for feed water heaters.

Rail bonding; motor housings; building teeth on defective pinions and gears; armor for shafts; copper wires and cables; transformer cases; meter and instrument connections.

Iron and steel pipe lines for the transmission of air, gas, oil, steam, and water; headers and special fittings, such as Tees, Els, and Y's; traps and coils.

General repairs to steel mine cars; mine car axles and wheels; hitchings; locomotive frames, pins, links, spokes, etc.; repairing storage batteries, frogs and crossings.

Filling up blow holes, porous spots, cracks, and breaks in castings of all kinds.

CUTTING—Plates; structural shapes; bars and rods; rails; pipes; cutting out rivets; wrecking; cast iron pots; floor plates; hubs of gears and fly wheels, etc.

Oxweld Welding and Cutting Units

Welding and cutting units (of the type pictured below) provide portable apparatus that is valuable for emergency repair work and for cutting in inaccessible places. Units of this type do the same work and use the same blowpipes as generator plants.

Oxweld Portable Welding Outfit

An Oxweld Welding Unit consists of—one welding blowpipe with 5 heads; one oxygen regulator with two gauges; one acetylene regulator with two gauges; two 12½-foot lengths of high pressure hose; one pair of fibre frame goggles; one truck; and wrenches, hose clamps, etc.

An Oxweld Cutting Unit consists of—one cutting blowpipe with 4 nozzles; one oxygen cutting regulator with two gauges; one acetylene regulator with two gauges; one 25-foot length of high-pressure hose; one 25-foot length of armored high-pressure hose; one pair of fibre frame goggles; one truck; and wrenches, hose clamps, etc.

Oxweld Acetylene Generators

The Oxweld Medium Pressure Acetylene Generator (see illustration) is designed primarily for installations where it is necessary to move the generator to various points for operation. This generator may be mounted on a four-wheel truck for easy transportation. It can also be used as a stationary generator.

The Medium Pressure Generator consists of a single shell containing both the carbide hopper and generating tank. The carbide feeding mechanism is controlled by the pressure of the generated gas against a flexible diaphragm and is positive in action. It is provided with an automatic no-pressure stop mechanism which closes the feed opening in case the pressure in the generator is reduced to zero, because of a leak in the line or other cause. A locking hand wheel positively locks the feed mechanism in its closed position when the generator is not in service.

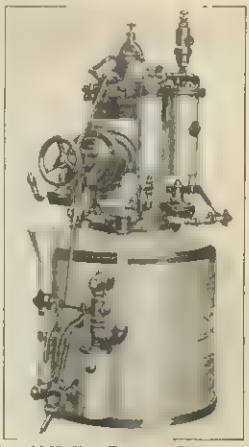
Mistakes in operation are provided against by a complete system of interference devices connecting the filling cap, feed mechanism, and residuum gate. A diaphragm relief valve is provided, discharging into the atmosphere, thus preventing the pressure rising above normal. A special Hydraulic Back Pressure Valve is also a part of the generator.

Oxweld Blowpipes

The Oxweld Welding Blowpipe is of the injector type. The acetylene is drawn into the mixing chamber by the injector action of the high pressure oxygen jet, in correct quantity to combine chemically with the acetylene, forming what is known as a neutral flame. This flame has an excess of neither acetylene nor oxygen. The Oxweld injector type of blowpipe corrects the slight but undesirable variations in pressure of the oxygen as it leaves the regulator and of acetylene as generated in pressure generators or as it is drawn from cylinders.

Blowpipe handles may be obtained in 5 sizes: 14, 17, 23, 29 and 35 inches long. Oxweld welding heads are supplied in 10 sizes and all are interchangeable in any of the 5 sizes of handles.

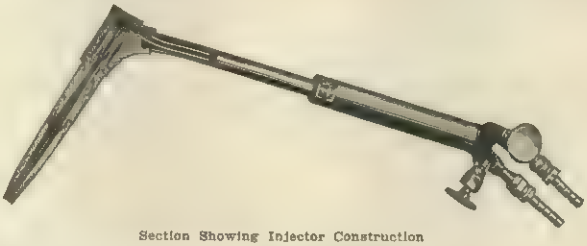
The Oxweld Cutting Blowpipe is constructed so that the preheating flame entirely surrounds the cutting jet of oxygen and hence always precedes it. The preheating flame is delivered through six openings arranged in a circle around the orifice discharging the high-pressure oxygen jet. The injector principle is used in the cutting blowpipe as in the welding blowpipe. A separate regulating valve controls the oxygen supply to the preheating flame, permitting closer adjustment of the flame to the work in hand.



Oxweld Medium Pressure Generator

Approval of Underwriters

Oxweld apparatus has passed the rigid and exacting examinations of the engineers of the Underwriters' Laboratories, under the direction of the National Board of Fire Underwriters, and is on their list of "Inspected Mechanical Appliances."



Section Showing Injector Construction

Oxweld Branches

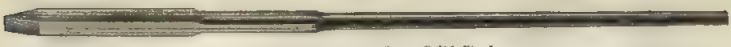
Atlanta	Denver	New York
Baltimore	Detroit	Omaha
Binghamton	Houston	Parkersburg
Birmingham	Indianapolis	Philadelphia
Boston	Kansas City	Phoenix
Brooklyn	Los Angeles	Pittsburgh
Buffalo	Memphis	Portland
Charlotte	Milwaukee	St. Louis
Chicago	Minneapolis	Salt Lake City
Cincinnati	Newark	San Francisco
Cleveland	New Haven	Seattle
	New Orleans	Tulsa

Oxweld Service

Oxweld has Resident Engineers in each of these cities and at many of them, stock as well. These engineers and their servicemen are always ready and willing to advise mining companies on welding and cutting, help train operators, inspect apparatus, and assist on especially difficult work. Send for free book, "Oxweld Can Do It."

RAILROAD TRACK TOOLS

CROW BARS



Wedge Point Crow Bars, Solid Steel.

Wedge Point	Pounds	8	10	12	14	16	18	20	22	24	26	28 and	30
	Length (approx.)	3'6"	4'	4'4"	4'6"	4'8"	5'	5'2"	5'4"	5'6"	5'8"	6'	6'4"
	8 lbs.	Per Pound, $											
	10 lbs. and over	Per Pound,											

Pinch Point Crow Bars, Solid Steel

Pinch Point	Pounds	10	12	14	16	18	20	22	24	26	28 and	30	
	Length (approx.)	4'	4'4"	4'6"	4'8"	5'	5'2"	5'4"	5'6"	5'8"	6'	6'4"	
	10 lbs. and over	Per Pound, $											

LINING BARS

No. 462

No. 462—Diamond or Needle Point Lining Bars, Solid Steel, 20 and 24 pounds....Per Pound, $ ... .

CLAW BARS

No. 442.

No. 442—Claw Bars, with Heel, Solid Steel, Weight 29 pounds .....Per Pound. $.....

PINCH BARS

No. 481

No. 481—Pinch Bars, with Heel, Solid Steel, Weight 26 pounds.....Per Pound, $.....

TAMPING BARS

No. 471.

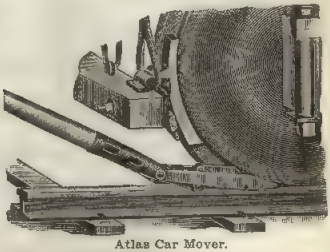
No. 471—Tamping Bars, Solid Steel, Weight 14 pounds.... .....Per Pound, $.....

CAR STARTER BARS

No. 472.

No. 472—Car Starter Bars, Solid Steel, 28 pounds..... .....Per Pound, $.....

CAR MOVERS



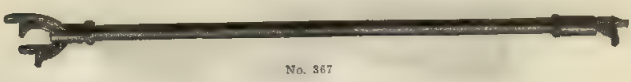
Atlas Car Mover.

Will work on any rail, whether wet or greasy, and move a car farther at a stroke than any other car mover. Metal parts are Malleable Iron and Steel. Handle is of selected Hardwood. Spur of Heel is of the finest Tool Steel.

Atlas Car Movers.....Each, $8.00
Extra Spurs Double.....Per Pair, .50
Extra Handles .....Each, 2.00

RAILROAD TOOLS

TRACK GAUGES



No. 367

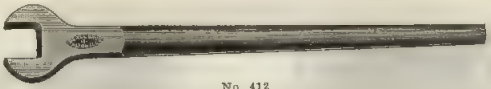
No. 367—Huntington Standard Track Gauge, Length 4 feet 8½ inches .....Each, $... .. ..

STEP LEVEL BOARDS

No. 369

No. 369—Best White Pine, with wear plates at both ends . . ..Each, $.....

TRACK WRENCHES



No. 412.

No. 412—Single End Straight Track Wrenches, weight 6 pounds—1 11/16 inch opening, fits 1⅝ inch outside diameter nut..... .. ..Per Pound, $.....

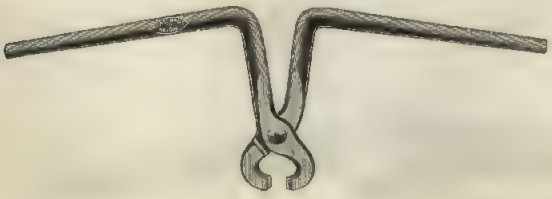
RAIL FORKS

No 421.

No. 421—Solid Steel Rail Forks, weight 15 pounds..... ....Per Pound, $.....

SPIKE PULLERS

RAIL TONGS



No. 422.

No. 422—Solid Steel Rail Tongs, weight 17 pounds.....Per Pound, $.....

No 382

No. 382—Solid Steel Spike Pullers..... { Two Ball .....Per Pound, $..... / Three Ball .....Per Pound, ...

Note.—For Mauls and Track Chisels, see page 290.

Richelieu Pearl Necklaces

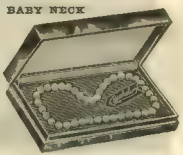
Richelieu Pearls are the Exact Reproductions of Genuine Pearls

Richelieu Pearls possess the color, density, richness, sweetness and splendid iridescence of the finest specimens of genuine pearls, recognized by millions of pearl wearers to have a distinctive character.

A guarantee tag is attached to each Richelieu Necklace

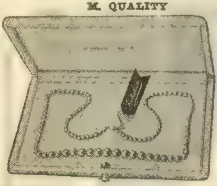
Richelieu Pearl Necklace, P. O. quality, solid gold spring ring clasp.

BABY NECK

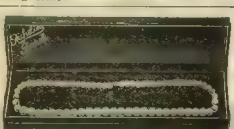


Pearl Necklace, 13 inches long, small beads uniform size, rose tint with white gold spring ring attached in rose colored leatherette case white satin lined.
No. 90J74. Each..... **2.70**

M. QUALITY



Pearl Necklace, Evenly matched and graduated, delicate rose tint 24-inch pearl necklace with fancy 14K white gold safety catch set with one diamond in beautiful rose colored white satin lined gift box.
No. 90J75. Each..... **5.00**
Same as above in 30 inches.
No. 90J76. Each..... **9.25**

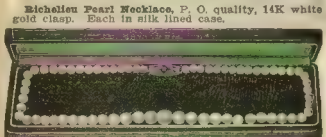


Pearl Necklace, 18-inch delicate cream tint, fine luster, evenly graduated with 10K white gold spring ring clasp, attached in white satin lined box.
No. 90J3. Each..... **5.65**

24-inch length.
No. 90J9. Each..... **7.45**

30-inch length.
No. 90J14. Each..... **9.25**

Richelieu Pearl Necklace, P. O. quality, 14K white gold clasp. Each in silk lined case.



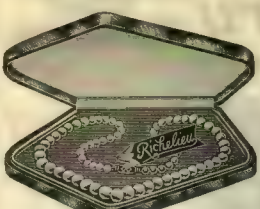
18-inch length.
No. 90J15. Each..... **6.65**

24-inch length.
No. 90J16. Each..... **8.15**

P. O. QUALITY. DIA. CLASP

Pearl Necklace, Delicate cream color, fine luster, beautifully graduated, 24-inch pearl necklace with 14K white gold safety catch set with one diamond in fine satin lined velvet gift box.
No. 90J21. Each..... **11.75**

Richelieu Pearl Necklaces



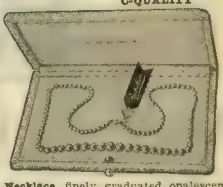
Pearl Necklace, beautiful rose tint evenly matched and graduated pearls with fancy 14 kt. White Gold safety clasp attached, in rose velvet satin lined box, 24 inches in length.
No. 90J71. Each..... 6.75

Richelieu Pearls are the Exact Reproductions of Genuine Pearls

Richelieu Pearls possess the color, density, richness, sweetness and splendid iridescence of the finest specimens of genuine pearls, recognized by millions of pearl wearers to have a distinctive character.

C-QUALITY

A guarantee tag is attached to each Richelieu Necklace

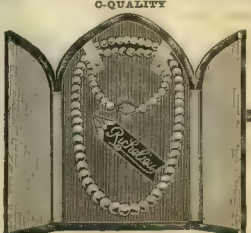


Pearl Necklace, 60 inches long, rose tint medium size beads, evenly matched, beautiful luster, in fancy velvet display box.
No. 90J72. Each..... 13.80

Pearl Necklace, finely graduated opalescent pearl beads, delicate rose tint with 14 kt. White Gold safety catch with one diamond in fancy velvet presentation case, 24 inches in length.
No. 90J22. Each..... 16.95

C-QUALITY

Pearl Necklace, delicate cream color with high luster properly graduated pearls, 24 inches in length with fancy 14 kt. White Gold safety catch, set with one diamond, in beautiful fancy velvet display box
No. 90J73. Each..... 12.50



Pearl Necklace, finely graduated opalescent pearl beads, delicate rose tint, with 14 kt. White Gold safety catch with one diamond, in fancy velvet presentation case 30 inches in length
No. 90J77. Each..... 19.85

Wm. Rogers & Son

"THE BEST AT THE PRICE"

"Reinforced Plate," or an Extra Deposit of Silver, where the Most Wear Comes

LINCOLN

Bright Finish

Heavy Plate

Dessert Forks
12 in unlined box, $7.50 dozen

Medium Forks
12 in unlined box, $7.92 dozen

Tea Spoons
12 in unlined box
$3.96 dozen

Dessert Spoons
12 in unlined box $7.50 dozen

Table Spoons
12 in unlined box $7.92 dozen

Triple Plate

Medium Knives or Forks, Hollow Handle	$23.40 doz.
No. 50 Medium Knives, Hollow Handle, Stainless Steel Blade	27.26 "
Dessert Knives or Forks, Hollow Handle	22.56 "
No. 51 Dessert Knives, Hollow Handle, Stainless Steel Blade	26.64 "
Breakfast Knives, Hollow Handle	25.19 "
Packed in unlined box	

Medium Knives or Forks, Solid Handle	$9.58 doz.
No. 41 Medium Knives, Solid Handle, Stainless Steel French Blade	17.16 "
No. 71 Medium Knives, Solid Handle, Stainless Steel Cimeter Blade	16.64 "
Dessert Knives, Solid Handle	9.36 "
Breakfast Knives, Solid Handle, Cimeter Shaped	9.68 "
Packed in unlined box	

Illustrations actual size. Dessert knives shown

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

LINCOLN

Bright Finish

Oyster Fork
Extra Plate, set of six, $3.44

Pickle Fork, Long
Extra Plate, each, $1.24

Butter Spreader
Extra Plate, set of six, $4.64

Sugar Shell
Packed 12 in unlined box, per doz. $7.50
Packed 1 in lined box, per doz. $9.16
No. 133 Set, Butter Knife and Sugar Shell in lined box, per set $1.68

Individual Salad Fork
Extra Plate, set of six, $5.20

Butter Knife
Packed 12 in unlined box, per doz., $7.92
Packed 1 in lined box, per doz., $9.58

Soup Spoon
Packed 6 in lined box, set of six, $4.28
Packed 12 in unlined box, per doz., $7.82
Extra Plate

Jelly Server
Extra Plate, each, $1.68

Ladies

Cream,	Extra Plate, each,	$1.24
Gravy,	" " "	1.66
Oyster,	" " "	3.58
Medium,	" " "	4.40

Cold Meat Fork, Large
Extra Plate, each, $1.38

Orange Spoon
Extra Plate, set of six, $3.54

Cheese Server, Hollow Handle
Each, $2.60

Tomato Server
Extra Plate, each, $2.20

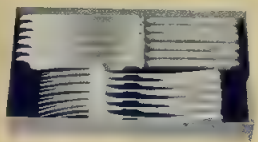
Berry Spoon
Extra Plate, each, $2.20

Bouillon Spoon
Extra Plate, set of six, $4.94

Ice Tea Spoon
Packed 12 in unlined box. Extra Plate, per doz., $7.26

One-half size

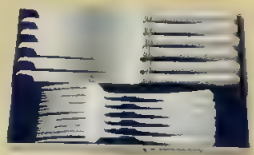
Illustrations of sets about one fifth actual size



No. 500 Set, in blue lined gift box, $8.74
6 Solid Handle Medium Knives and 6 Flat Forks
No. 504 with Dessert Knives and Forks $8.44
No. 506 with Natural Stainless Steel Knives, 12.60
No. 506 [illegible] Stainless Steel Knives, 17.50

No. 720 Baby Set, $2.20
Flat Handle Baby Spoon, Knife and Fork, in blue lined gift box

All Fancy Pieces in Blue Lined Gift Boxes



No. 702 Set, in blue lined gift box, $15.92
6 Hollow Handle Medium Knives and 6 Flat Handle Medium Forks
No. 703 with Dessert Knives and Forks, $15.30

SILVER PLATED ON HIGH GRADE NICKEL SILVER

★ ROGERS & BRO. A-1

TRADE MARK

EVERY PIECE ABSOLUTELY GUARANTEED

THE GRECIAN PATTERN

Bright Finish

ALL silverware bearing the celebrated trade mark ★ ROGERS & BRO. A 1 is heavily plated with pure silver on highest grade nickel silver base. The Tea Table Dessert and Soup Spoons, Medium and Dessert Forks, are SECTIONAL PLATED and stamped XII having an *EXTRA THICKNESS OF SILVER* on parts most exposed to wear, viz: tips and backs of bowls and tines which adds greatly to their durability

	Set XII Triple Sectional Plate	Set XII Triple Sectional Plate
Tea Spoons, half doz. in unlined box, per doz.	$6 56	$8 32
Dessert Spoons, half doz. in velvet lined box, per doz.	11 76	14 14
Table Spoons, half doz. in unlined box, per doz.	13 12	16 64
Soup Spoons, round bowl, half doz. in unlined box, per doz.	13 12	16 64
Soup Spoons, half doz. in blue velvet lined box, per doz.	13 74	17 26
5 O'Clock Tea Spoons, half doz. in blue velvet lined box, per doz.	7 18	
Medium Forks, half doz. in unlined box, per doz.	13 12	16 64
Dessert Forks, half doz. in unlined box, per doz.	11 76	14 14

HOLLOW HANDLE Cutlery, *heavily silver plated* Nickel Silver, silver soldered, finely tempered forged steel blades

Medium Knives, Scimeter Blades, half doz. in blue velvet lined box, per doz.	$24 76
Medium Knives, French Blades, as illustrated, half doz. in blue velvet lined box, per doz.	24 76
Medium Knives, French Blades, STAINLESS STEEL, half doz. in blue velvet lined box, per doz.	28 60
Dessert Knives, Scimeter Blades, half doz. in blue velvet lined box, per doz.	24 14
Dessert Knives, French Blades, half doz. in blue velvet lined box, per doz.	24 14
Breakfast Knives, Scimeter Blades, half doz. in blue velvet lined box, per doz.	24 44
Breakfast Knives, French Blades, half doz. in blue velvet lined box, per doz.	24 44
Carving Sets, Three-piece	Per Set $18 20
Carving Sets, Three piece, STAINLESS STEEL BLADES	19 56
Bird Sets, Two piece	8 54

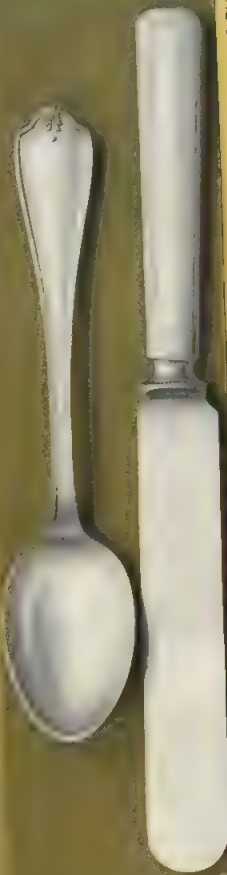
SOLID HANDLE Steel Knives and Nickel Forks, silver plated

No. 12 Medium Knives or Forks, per doz.	$9 88
No. 12 Medium Knives, French Blades, plated, per doz.	9 88
No. 12 Medium Knives, French Blades, STAINLESS STEEL, per doz.	17 48
No. 12 Dessert Knives or Forks, per doz.	9 68
No. 12 Breakfast Knives, Scimeter Swaged Blades, per doz.	10 00
No. 12 Breakfast Knives, French Blades, per doz.	10 00

Packed one half dozen in box or set, six each Knives and Forks in box

RB64

Patents Applied for



INTERNATIONAL SILVER CO.

SILVER PLATED ON HIGH GRADE NICKEL SILVER

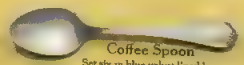
★ ROGERS & BRO. A-1

TRADE MARK

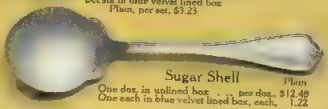
EVERY PIECE ABSOLUTELY GUARANTEED

THE GRECIAN PATTERN

Bright Finish

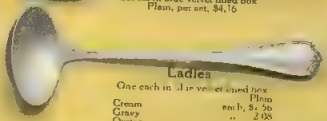


Coffee Spoon
Set six in blue velvet lined box
Plain, per set, $9.23



Sugar Shell Plain
One doz. in unlined box . . per doz., $12.48
One each in blue velvet lined box, each, 1.22

Orange Spoon
Set six in blue velvet lined box
Plain, per set, $4.16



Ladles
One each in blue velvet lined box

	Plain
Cream	each, $ 1.56
Gravy	" 2.08
Oyster	" 4.50
Medium Soup	" 5.54

Soup Spoon
A-1 XII
One doz. in unlined box per doz., $13.12
Half " " blue velvet lined box, set, 6.88

Butter Knife, Bent Handle
One doz. in unlined box . . per doz., $14.56
One each in blue velvet lined box, each, 1.40

Sugar Tongs
One each in blue velvet lined box, each, $2.08

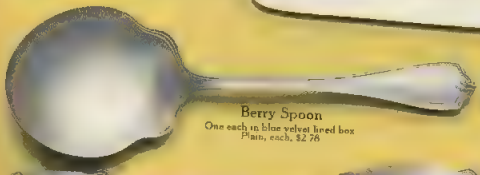
Bouillon Spoon
Set six in blue velvet lined box, per set, $6.24

Baby Spoon
One each in blue velvet lined box, each, $0.88
Baby Set
Spoon and Food Pusher
Per set, $1.74

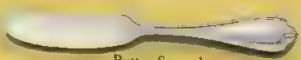
Oyster Fork
Set six in blue velvet lined box, per set, $4.38

Iced Tea Spoon
One doz. in unlined box
Length 7½ inch, per doz., $9.06

Pie Server, Hollow Handle
$4.35 each



Berry Spoon
One each in blue velvet lined box
Plain, each, $2.76



Butter Spreader
Set six in blue velvet lined box, per set, $5.88

Individual Salad Fork
Set six in blue velvet lined box
Plain, per set, $6.56

Cold Meat Fork
One each in blue velvet lined box
Plain, each, $1.74

All patterns One-Half Size

Child's Set, Knife, Fork, Spoon
In blue velvet lined box, per set, $2.76

Butter Knife and Sugar Shell
In blue velvet lined box
Plain, per set, $2.54

The Grecian Pattern is furnished in combination sets same as Empire

Illustrations One Third Size

RB6 5

INTERNATIONAL SILVER CO.

GIG SADDLE SEATS

No. 71½—Japanned, 8-inch, flexible crupper loop. Per dozen.....$2.90

Open stock—Loose.

GAG RUNNERS

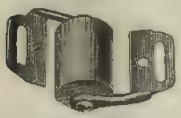
No. 384—Gem Swivel.

Sizes	⅝	¾
Japanned—Per gross	$10.00	10.00
XC plate—Per gross.	11.60	11.60

Half gross in a box.

LINE SPREADERS

Roller.



Adams—For Use on Line Spread Straps.

1-inch Japanned plate, wood rollers. Per dozen $1.92

1⅛-inch Japanned plate, wood rollers. Per dozen 1.92

Three dozen in a box.

BRIDLE ROSETTES

For Ornamental Bridles.

Placed on loops of bridle front, loops being held in place between forks of bridle crown.

Tinned.

Shell wire back and loop combined, cut shows 1¾-inch.

Diameter, inches	1¾
Loop, inches	1
Wt., gross, lbs.	3¾
Box contains, gross	1
No. 1113½—Per gross	$3.90

Brass or Nickel.

Patent solid back and riveted loop, cut shows 1¾ inch.

Diameter, inches	1⅝
Wt., gross, lbs.	5
Box contains, gross	½
No. 60—Solid brass. Gross.	$10.80
No. 62—Nickel. Per gross..	10.80

No. 2200 No. 2362

Brass or Nickel.

New style close fitting patent solid back and riveted loop, cut shows 2-inch.

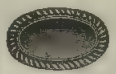
Diameter, inches	1¾
Loop, inches	1
Wt., per gross, lbs.	6½
Box contains, gross	½
No. 2200—Solid brass. Gross.	$11.20
No. 2202—Nickel. Gross...	11.20
Diameter, inches	2
Loop, inches	1
Wt., per gross, lbs.	9½
Box contains, gross	¼
No. 2200—Solid brass. Gross.	$14.40
No. 2202—Nickel. Gross...	14.40
Diameter, inches	2⅛
Loop, inches	1¼
Wt., per gross, lbs.	12¾
Box contains, gross	⅓
No. 2200—Solid brass. Gross.	$18.60
No. 2202—Nickel. Gross...	18.60

Brass or Nickel.

Patented Solid Back—Beaded Edges.

Diameter, inches	1¾
Wt., per gross, lbs.	5
Box contains, gross	¼
No. 2362—Nickel. Gross...	$10.50
No. 2360—Solid brass. Gross.	10.50
Diameter, inches	2¼
Wt., per gross, lbs.	8½
Box contains, gross	½
No. 2362—Nickel. Gross...	$17.50
No. 2360—Solid brass. Gross.	17.50

Gross prices apply on orders for full boxes only.



Exact Size 1⅛x15-16-inch.

Gilt or Nickel.

Oval Rope Edge, Solid filled.

Loop, inches	
Wt., per gross, lbs.	7½
Box contains, gross	½
No. 1451—Gilt. Gross	$14.00
No. 1452—Nickel. Gross	14.00

Initial.

No. 326 No. 6507.

Initial crystal, beveled glass front, flat face, black letters.

No. 326—1¾-inch, silver back and rim, solid loop. Dozen pairs..$6.00

No. 325—1¼-inch, gilt back and rim, solid loop. Per dozen pairs... 6.00

Large crystal center with horse head and red reflected back. A very attractive rosette.

No. 6507—2-inch, brass Dozen $4.75

No. 6510—2-inch, nickel. Dozen 4.75

One dozen on a card. Weight, per dozen, 1⅝ pounds.

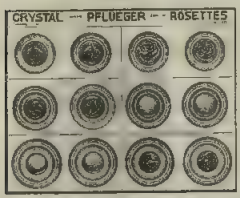
Will sell less quantity if desired.

BRIDLE ROSETTES

Crystal Assortment.

Assortment 7A special—Consists of 6 pairs 1¾-inch crystal rosettes, heavy wire loops, one assortment on display card. Per assortment..$3.00

Inlaid.



Fancy beveled edges with crystal centers and assorted designs in crystals with fancy reflecting backs.

No. 11A—1¾-inch, nickel. Per card $2.40

No. 12A—1¾-inch, brass. Per card 2.40

One dozen on a card. Weight, per dozen, ¾ pound.

Empir, XC plate, square eye.

Eye, inches	⅝	¾	⅞
Wt., gross, lbs.	6½	8	8½
No. 56—Gross.	$10.80	10.80	10.80
Eye, inches	1	1⅛	1¼
Wt., gross, lbs.	10	12½	16
No. 56—Gross.	$10.80	14.80	17.00
Eye, inches	1⅜	1⅝	2
Wt., gross, lbs.	23	36	37
No. 56—Gross.	$18.80	21.60	25.20

⅝ to 1 inch, half gross; balance quarter gross in a box.

HARNESS SNAPS

XC Plate, Square Eye, Flat Aluminum Steel Spring.

Eye, inches	⅝	¾	⅞
Wt., gross, lbs.	8	8¾	10
No. 70—Gross.	$9.20	9.20	9.20
Eye, inches	1	1⅛	1¼
Wt., gross, lbs.	10½	12½	16¾
No. 70—Gross.	$9.20	13.10	15.80
Eye, inches	1⅜	1¾	2
Wt., gross, lbs.	21	26¼	37
No. 70—Gross.	$17.60	19.40	22.00

⅝ to 1 inch, ½ gross in a box; balance, ¼ gross in a box.

Imitation rubber, square eye, flat gilt steel spring.

Eye, inches	⅝	¾	⅞
Wt., gross, lbs.	8	8¾	10
No. 44—Gross.	$9.20	9.20	9.20
Eye, inches	1	1⅛	1¼
Wt., gross, lbs.	10½	12½	16¾
No. 44—Gross.	$9.20	13.10	15.80
Eye, inches	1⅜	1¾	2
Wt., gross, lbs.	21	26¾	37
No. 44—Gross.	$17.60	19.40	22.00

⅝ to 1 inch, half gross; balance, ¼ gross in a box.

MUZZLE SNAPS

A medium priced muzzle snap that will give satisfactory and lasting service.

No. 782—Polished; weight per gross, 1¼ lbs. Per gross.....$2.90

One gross in a box.

For Wire Muzzles.

No. 744—½-inch XC plate; flat steel spring. Weight, per gross, 4 pounds. Per gross $10.80

One gross in a box.

Bit.

To snap bit onto halter or bridle.

No. 745—⅝-inch, XC plate, bit snap, flat steel spring. Weight, per gross, 7¾ lbs. Per gross.....$10 80

Half gross in a box.

Bag Snaps.

For satchel and bag straps.

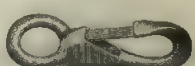
No. 340—½-inch, Cleveland, XC plate. Weight, per gross, 2⅝ lbs. Per gross $5.80

One gross in a box.

Round Eye.

No. 403—King, bronzed, round eye, flat steel spring.

Eye, inches	⅝	¾
Wt., gross, lbs.	12	20
Per gross	$9.80	12.20

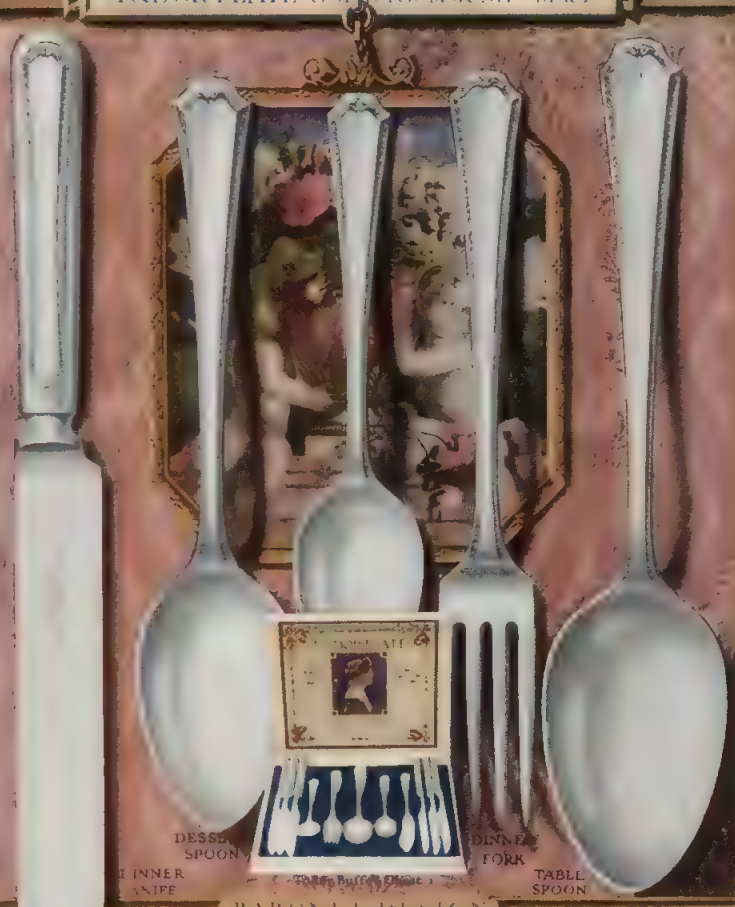


No. 71—XC plate, Cleveland, round eye, flat steel spring.

Eye, inches	¾
Weight, per gross, lbs.	12
Per gross	$10.30

Half gross in a box.

TUDOR PLATE ONEIDA COMMUNITY MADE



BARONET DESIGN

20 YEARS

BRIGHT OR GRAY FINISH

KNIVES (Stainless Blades,

Each Extra Individual Dinner..... $ 24.80

REPLACEMENT GUARANTEE
BUFFET CHESTS

THE CHEST A FREE
YOU PAY FOR SILVERWARE ONLY

TUDOR PLATE - ONEIDA COMMUNITY MADE

Sugar Spoon *each* $ .88

Butter Knife . . . . . *each* $ 88
Butter Knife and Sugar Spoon . *set* $1 75

Orange or Grapefruit Spoon *set* $3 44

Iced Tea or Iced Drink Spoon *set* $3 64

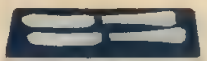
Serving or Gravy Ladle . . . . . *each* $1 85
Salad Dressing or Cream Ladle . . . *each* $1 21
Medium Soup Ladle . . . . . *each* $4 24

STAINLESS CARVING SET

2 Piece Hollow Handle . . . . . *set* $9 22

MISCELLANEOUS

Baby Spoon Bent Handle . . . . . *each* $ .67
Baby Spoon Straight Handle . . . . *each* $ 67
Salt Dish . . . . . *each* $ 67
Baby Set with Bent Handle Spoon . *set* $1 14
Baby Set with Straight Handle Spoon *set* $ 34
Oyster or Seafood Forks . . . . . *set* $3.46
Bouillon or Consomme Spoon . . . . . *set* $3.64
Pickle or Olive Fork . . . . . *each* $1.18
Pie or Salad Knife (Tomahawk) . . . *each* $2 11
Jam Spoon . . . . . *each* $ 73
Ice Cream or Sundae Spoons . . . . *set* $3 44
Sugar Tongs . . . . . *each* $1 46
3 Piece Child's Set Flat . . . . . *set* $2 11



Bread or Sandwich Spreaders (Individual) *set* $4 64

Salad Forks (Individual) . *set* $5 24

Large Cold Meat or Serving Fork *each* $1 54
Small Cold Meat or Sardine Fork . . *each* $1 04

Serving or Berry Spoon . . . . . *each* $2 11

KNIFE AND FORK SETS

(6 Knives and 6 Flat Forks — *Per Set*)

With Medium Embossed Knives $ 8 39
With Dessert Embossed Knives 7 81
With Medium Hollow Handle Knives 14 46
With Dessert Hollow Handle Knives 13 76
With Medium H. H. Stainless Knives 15 04

76 PIECE CHESTS

Furnished in 3 Designs. All Same Price.
Chain Handle Flat Lid
OAK FINISH WITH DRAWER
Mahogany Finish Lift Lid Drawer

CHEST AND CONTENTS

With Medium Embossed Knives $ 80 14
With Dessert Embossed Knives 75 58
With Medium Hollow Handles Knives . . 34 20
With Dessert Hollow Handle Knives . 23 74

1847 ROGERS BROS.

CROMWELL PATTERN

Bright

A design that fills every requirement for a plain pattern. The grading of the metal makes each piece mechanically perfect

No. 53 Dessert Knife Solid Handle

No. 53 Dessert Fork Solid Handle

Soup Spoon

Dessert Fork Flat Handle

Six in Box Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.71	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

Bouillon Spoons, six in blue velvet lined box per set, $8.55

Hollow Handles Nickel Silver Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78
With Stainless Blades	31.30	With Stainless Blades	30.66	Dessert Forks	29.16
Breakfast Knives	$28.58				
With Stainless Blades	31.08				

Solid Handles, Six in Rocked Box, Prices per Dozen

Dinner Knives, No. 53	$12.10	Dessert Knives, No. 53	$11.68	Dinner Forks, No. 53	$12.10
With Stainless Blades, S.&S.,	17.94				

Dessert Forks, No. 53 $11.68

Dessert Knife Hollow Handle $6.28

INTERNATIONAL SILVER CO.

CROMWELL PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 733, 79
Bird or Steak Set, 2 pieces
Per set, $9.18

No. 734/79
Bird or Steak Set 3 pieces
Per set, $13.36

No. 658/79 Game Set
2 pieces, per set, $15.02

No. 657/79 Carving Set
3 pieces, per set, $19.60

Nickel Silver, Silver Soldered, Hollow Handles, Steel Blades

No. 662/79
Cold Meat Fork
Each, $2.43

No. 604/79
Sugar Shell and Butter Knife
Per set, $3.48

No. 608/79
Sugar Shell
Each, $1.63

No. 609/79
Butter Knife
bent handle
Each, $1.85

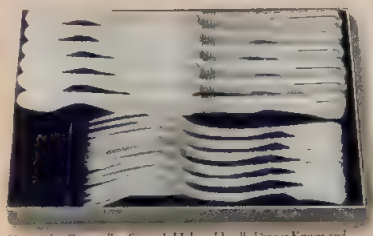
No. 717/79
Salad Forks, individual
Set of six, $9.18

No. 611/79
Gravy Ladle
Each, $2.92

No. 610/79 Cream Ladle
Each, $2.23

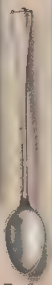
No. 612/79
Oyster Ladle, each, $6.68

No. 613/79 Medium Ladle, each, $9.04



No. 158½ Cromwell. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58
With Stainless Blades, $24.82
No. 159½ Cromwell. Dessert, per set, $22.94
With Stainless Blades, $24.20
No. 155½ Cromwell. Six each No. 53 Dinner Knives and Cromwell Flat Handle Dinner Forks, per set, $15.22
With Stainless Blades, $18.14
No. 156½ Cromwell. Dessert, per set, $14.72
No. 154½ Cromwell. Six each No. 53 Dinner Knives and Forks Per set, $12.10
With Stainless Blades, $15.02
No. 157½ Cromwell. Dessert, per set, $11.68

No. 652/79
Butter Spreaders
Set of six, $7.51



Iced Tea Spoon
Per dozen, $13.36

No. 615/79 Berry Spoon
Each, $3.76

W

c-6-23

1847 ROGERS BROS.

CROMWELL PATTERN

Bright

A design that fills every requirement for a plain pattern. The grading of the metal makes each piece mechanically perfect

Six in Box, Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

Bouillon Spoons, six in blue velvet lined box, per set, $8.35

Hollow Handles Nickel Silver, Silver Soldered Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78	Breakfast Knives	$28.58
With Stainless Blades	31.30	With Stainless Blades	30.66	Dessert Forks	28.16	With Stainless Blades	31.08

Solid Handles, Six in Racked Box, Prices per Dozen

Dinner Knives, No. 53	$12.10	Dessert Knives, No. 53	$11.68	Dinner Forks, No. 53	$12.10	Dessert Forks, No. 53	$11.68
With Stainless Blades, S.&S.,	17.94						

INTERNATIONAL SILVER CO.

CROMWELL PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 733/79
Bird or Steak Set, 2 pieces
Per set, $9.18

No. 734/79
Bird or Steak Set 3 pieces
Per set, $13.36

No. 658/79 Game Set
2 pieces, per set, $15.02

No. 657/79 Carving Set
3 pieces, per set, $19.60

Nickel Silver, Silver Soldered, Hollow Handles, Steel Blades

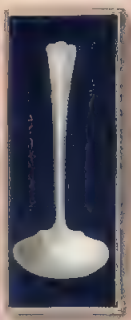
No. 662/79
Cold Meat Fork
Each, $2.43

No. 604/79
Sugar Shell and Butter Knife
Per set, $3.48

No. 608/79
Sugar Shell
Each, $1.63

No. 609/79
Butter Knife
bent handle
Each, $1.85

No. 717/79
Salad Forks, individual
Set of six, $9.18



No. 611/79
Gravy Ladle
Each, $2.92

No. 610/79 Cream Ladle
Each, $2.23

No. 612/79
Oyster Ladle, each, $6.68

No. 613/79 Medium Ladle, each, $9.04

No. 158. Cromwell. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58
With Stainless Blades, $24.82

No. 159½. Cromwell. Dessert, per set, $22.94
With Stainless Blades, $24.20

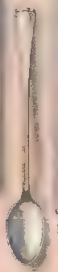
No. 155. Cromwell. Six each No. 53 Dinner Knives and Cromwell Flat Handle Dinner Forks, per set, $15.22
With Stainless Blades, $18.14

No. 156½. Cromwell. Dessert, per set, $14.72

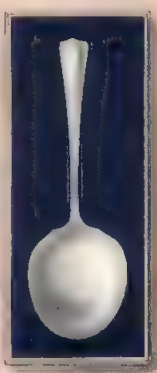
No. 154½. Cromwell. Six each No. 53 Dinner Knives and Forks
Per set, $12.10
With Stainless Blades, $15.02

No. 157. Cromwell. Dessert, per set, $11.68

No. 602/79
Butter Spreaders
Set of six, $7.51



Iced Tea Spoon
Per dozen, $13.36



No. 615/79 Berry Spoon
Each, $3.76

W

6-6-23

1847 ROGERS BROS.

OLD COLONY PATTERN

French Grey, Bright Trimmed

Note the pierced handle and sterling effect of the design. Its popularity stamps it as one of the most remarkable patterns ever produced

ILLUSTRATIONS
ACTUAL SIZE

Six in Box, Prices per Dozen

Tea Spoons	$9 18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17 74
Table Spoons	18 36	Dinner Forks, flat handles	18.36

No. 52 Dessert Knife
Solid Handle

Bouillon Spoons, six in blue velvet lined box — per set, $8.35

Hollow Handles, Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28 15	Dinner Forks	$28.78
With Stainless Blades	31.30	With Stainless Blades	30 65	Dessert Forks	28.16
Breakfast Knives	$28.58				
With Stainless Blades	31 08				

Solid Handles, Six in Racked Box, Prices per Dozen

Dinner Knives, No. 52, $12.10 — Dessert Knives, No. 52 $11 68 — Dinner Forks, No. 52 $12.10 — Dessert Forks, No. 52 $11 68

c-6-23

INTERNATIONAL SILVER CO.

OLD COLONY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 116/78
Child's Set, 3 pieces
Per set, $3.76

No. 596/78
Child's Set, 3 pieces
With Embossed Solid Handle
Knife, per set, $3.48

No. 593/78
Child's Set, 3 pieces
With Nickel Silver, Silver
Soldered, Hollow Handle Knife
Per set, $4.59

No. 662/78
Cold Meat Fork
Each, $2.43

No. 604/78
Butter Knife and Sugar Shell
Per set, $3.48
No. 608/78 Sugar Shell
Each, $1.63
No. 609/78 Butter Knife
bent handle, each, $1.85

No. 717/78
Salad Forks, individual
Set of six, $9.18

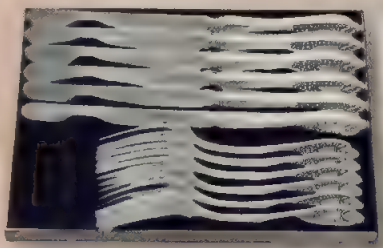
No. 760/78
Mayonnaise Ladle
Each, $1.95

No. 610/78
Cream Ladle
Each, $2.23

No. 611/78
Gravy Ladle
Each, $2.92

No. 612/78
Oyster Ladle
Each, $6.68

No. 613/78
Medium Ladle
Each, $9.04



No. 158½ Old Colony. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58
With Stainless Blades, $24.82

No. 159½ Old Colony. Dessert, per set, $22.94
With Stainless Blades, $24.20

No. 165½ Old Colony. Six each Hollow Handle Breakfast Knives and Flat Handle Dinner Forks, per set, $23.58

No. 166½ Old Colony. Six each Hollow Handle Breakfast Knives and Flat Handle Dessert Forks, per set, $23.16

No. 154½ Old Colony. Six each No. 52 Dinner Knives and Forks, per set, $12.10

No. 157½ Old Colony. Dessert, per set, $11.68

No. 155½ Old Colony. Six each No. 52 Dinner Knives and Old Colony Flat Handle Dinner Forks, per set, $15.22

No. 156½ Old Colony. Dessert, per set, $14.72

No. 652/78
Butter Spreaders
Set of six, $7.51

Iced Tea
Spoon
Per dozen
$13.36

No. 615/78
Berry Spoon
Each, $3.76

c-6-13

OLD COLONY PATTERN

French Grey, Bright Trimmed

Note the pierced handle and sterling effect of the design. Its popularity stamps it as one of the most remarkable patterns ever produced

Six in Box, Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

No. 52 Dessert Knife Solid Handle

Bouillon Spoons, six in blue velvet lined box, per set, $8.55

Hollow Handles Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78
With Stainless Blades	31.30	With Stainless Blades	30.69	Dessert Forks	28.16

Breakfast Knives $28.58
With Stainless Blades 31.08

Solid Handles, Six in Rocked Box, Prices per Dozen

Dinner Knives, No. 52, $12.10 Dessert Knives, No. 52 $11.68 Dinner Forks, No. 52, $12.10 Dessert Forks, No. 52 $11.68

c-6-23

INTERNATIONAL SILVER CO.

OLD COLONY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 116/7S
Child's Set, 3 pieces
Per set, $3.76

No 596 7S
Child's Set 3 pieces
With Embossed Solid Handle
Knife, per set, $3 48

No. 593 7S
Child's Set, 3 pieces
With Nickel Silver, Silver
Soldered, Hollow Handle Knife
Per set, $4 59

No. 662/7S
Cold Meat Fork
Each, $2.43

No. 604/7S
Butter Knife and Sugar Shell
Per set, $3.46

No. 608/7S Sugar Shell
Each, $1 63

No. 609/7S Butter Knife
bent handle, each, $1 85

No. 717/7S
Salad Forks individual
Set of six, $9 .8

No. 750/7S
Mayonnaise Ladle
Each, $1.95

No. 610/7S
Cream Ladle
Each, $2.23

No. 611/7S
Gravy Ladle
Each, $2.92

No. 612/7S
Oyster Ladle
Each, $6.68

No. 613 7S
Medium Ladle
Each, $9.04

No. 158½ Old Colony. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23 38
With Stainless Blades, $24 82

No. 159½ Old Colony. Dessert, per set, $22.94
With Stainless Blades, $24 28

No 165½ Old Colony. Six each Hollow Handle Breakfast Knives and Flat Handle Dinner Forks, per set, $23.58

No 166½ Old Colony. Six each Hollow Handle Breakfast Knives and Flat Handle Dessert Forks, per set, $23.16

No. 154½ Old Colony Six each No. 52 Dinner Knives and Forks, per set, $12 10

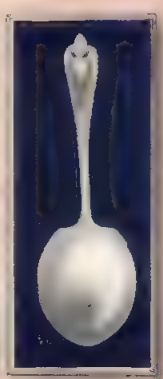
No. 157½ Old Colony. Dessert, per set, $11.68

No 155½ Old Colony Six each No. 52 Dinner Knives and Old Colony Flat Handle Dinner Forks, per set, $15.22

No. 156½ Old Colony. Dessert, per set, $14.72

No 652 7S
Butter Spreaders
Set of six, $7 51

Iced Tea
Spoon
Per dozen
$13 36



No 615 7S
Berry Spoon
Each, $3 76

T

c 623

The LUXOR Pattern

PLATINUM FINISH

5 o'Clock Tea,	Six packed in unlined box,	$6.18 per dozen
Tea,	" "	9 75 " "
Dessert	" "	17 10 " "
Tabl	" "	18 90 " "
Soup	" "	18 90 " "
Dessert Fork,	" "	17 70 " "
Dinner Fork,	" "	18 90 " "
Dessert knife, Hll. (Stainless Blade)	" "	30 60 " "
Dinner knife, Hll. (Stainless Blade)	" "	31 50 " "

ALVIN SILVER

Long-Lite Plate

LUXOR

PLATINUM FINISH

INDIVIDUAL SALAD FORK SET

Per set . . . . . $1.

FIVE O'CLOCK TEAS

Sterling and red box $4.70

Silk in lined box 5.40

OYSTER FORK SET

Per set . . . . . $

BOUILLON SPOON SET

Per set . . . . . $ .50

SIX ICED TEA SPOONS

Per set $6.00

LADLES

Cream, each . . . $2.23 Gravy, each, $2

BUTTER SPREADER SET

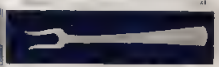
Per set . . . . . $1.

BUTTER KNIFE

Each $1.85

ORANGE OR GRAPEFRUIT SPOON SET

Per set $5.94



PICKLE OR OLIVE FORK

Each . . . . . $1.

SUGAR SHELL

Each $1.04

JELLY SERVER

Per . . .

BERRY SPOON

Each $3.76

BUTTER KNIFE AND SUGAR SHELL

Per set . . . . . $

SIX COFFEE SPOONS

Per set $4.60

COLD MEAT FORK

Each . . . . . $2.30 Medium size $2.15

THREE PIECE CHILD'S SET

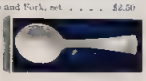
Hollow Handle Knife, per set . . . $4.

SHORT HANDLE BABY SET

Spoon and Fork, set $2.50

SUGAR TONGS

Each $2.87



SHORT HANDLE BABY SPOON

Each $1.2

TOMATO SERVER (not Illustrated) Hollow Handle $6.08, Flat Handle, $4.17

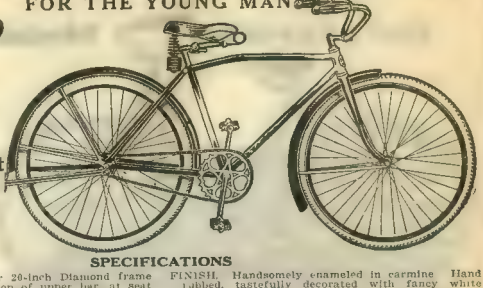
ALVIN PATENT

APOLLO BICYCLE

FOR THE YOUNG MAN

Model A400

Built for the Discriminating Buyer who Wants the Best



29.00 EACH

SPECIFICATIONS

FRAME. Built on regular 20-inch Diamond frame line, but with 2 inch drop of upper bar at seat post mast, this making a specially desirable model with full size wheels and tires. Made of 1 inch 19 gauge high carbon steel tubing, flush joints.
WHEELS. 28 inch.
FORK. Drop forged, oval crown seamless fork sides. 17 gauge.
CRANK HANGER. Drop forged, 7 inch cranks, one-piece, removable without disturbing cups.
FRONT HUB. New Departure.
FINISH. Handsomely enameled in carmine. Hand lettered, tastefully decorated with fancy white head.
COASTER BRAKE. New Departure.
RIMS. One-piece maple, enameled to match frame.
CHAIN. ⅛ inch roller.
SPOKES. Highest quality, 36 inch front, 36 inch rear.
TIRES. United States Chain Black Tread.
HANDLE BAR. Adjustable, forward extension with long rubber grips.
SADDLE. Motorbike style.

APOLLO MOTORBIKE

THE YOUNG MAN'S FAVORITE

Model A900

The Zenith of Bicycle Quality

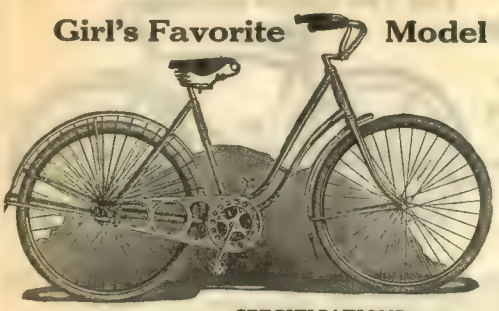
32.00 EACH

SPECIFICATIONS

PEDALS. Rubber.
GUARDS. Deep drop side.
FRAME. Flush joint, 1 inch, high carbon steel tubing, extra heavy and strongly reinforced 22 inch frame measuring 20 inches at seat post.
WHEELS. 28 inch.
TRUSS FORK. Motorcycle style as illustrated, made of 17 gauge high carbon steel tubing, handsomely decorated.
CRANK HANGER. Drop forged, one piece, 7 inch; can be removed without disturbing cups.
FINISH. Handsomely enameled in Blue, decorated with fancy white head. Four coats, hand rubbed
FRONT HUB. New Departure.
COASTER BRAKE. New Departure.
RIMS. One piece maple enameled to match frame
CHAIN. ⅛ inch roller.
SPOKES. Highest quality, 36 inch front, 36 inch rear.
TIRES. U. S. Chain black tread.
HANDLE BAR. Motorcycle style, adjustable extension, long rubber grips.
SADDLE. Motorbike style.
PEDALS. Rubber
GUARDS. Deep drop sides.

APOLLO BICYCLE

Girl's Favorite Model A300



A Strictly High Grade Girl's BICYCLE

33.00 EACH

SPECIFICATIONS

FRAME. Drop pattern, 20-inch. Made of high carbon steel tubing, reinforced. Flush joints.
WHEELS. 28-inch.
FRONT FORK. Drop forged crown, seamless fork sides 17 gauge.
CRANK HANGER. Drop forged, Diamond pattern, 6½ inch, one-piece cranks, removable without disturbing cups.
FINISH. Handsomely enameled in blue. Hand rubbed tastefully decorated with fancy white head.
FRONT HUB. New Departure.
COASTER BRAKE. New Departure.
RIMS. One-piece maple, enameled to match frame.
SPOKES. Highest quality, 36 in front and 36 in rear.
CHAIN. ½-inch roller.
TIRES. U. S. black chain tread
HANDLE BAR. Adjustable, forward extension with long rubber grips.
SADDLE. Ladies' troxell comfort spring
PEDALS. Ladies rubber.
GUARDS. Front and rear, rear guard laced to protect skirts. Full chain guard covering front and rear sprocket.
STAND. Patented armless.

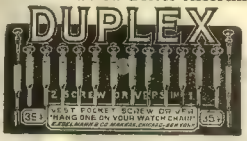
Handy Hammer

No. 15C177. "Han-D" Hammer, is beautifully nickel-plated and polished 7½ in. long, weighs 10 oun es Hammer is of high grade steel. The three screwdrivers are nested inside the hammer handle. Blades or high grade tool steel.

Per set ..... .85

Per set, lots of 10 ..... .80

Vest Pocket Screw Driver Assortment



No. 15C157. Duplex Vest Pocket Screw Driver. Blades made of high-grade steel, nickel plated and polished. Most compact and practical screw driver on the market. With this screw driver any size screw can be manipulated. Length 3¾ inches. One dozen on display card. Per dozen 2.50

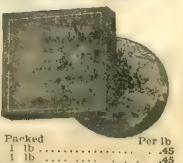
No. 15C178. 'Han-D' Wrench Set, six strong steel wrenches made of the best grade steel. A thumb screw holds the six wrenches together. This wrench has 12 openings of the following sizes:

3/16"	1/4"	5/16"	3/8"	7/16"	1/2"
9/16"	5/8"	11/16"	3/4"	13/16"	7/8"

Longest wrench, 7 inches long, smallest, 5⅛ inches long.

Per set.....70 | Per set in lots of 10.. .65

Friction Tire Tape

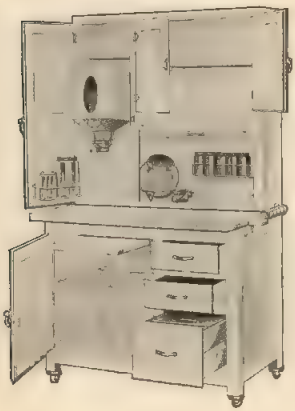


Friction Tape. Dutch brand, made of the finest fabric, coated with pure rubber. It is guaranteed not to dry up. ¾ in. wide. Each roll in carton.

No	Size	Packed	Per lb
15C178.	1-oz. rolls	1 lb	.65
15C179.	2-oz. rolls	1 lb	.65
15C180.	4-oz. rolls	3 lb	.65

*KITCHEN CABINETS

ARIEL



These kitchen cabinets are made of three ply panel construction throughout. Special reinforced

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain top.

Equipped with easy rolling casters and with ant-proof caster cups. All metal bread and cake drawers with sliding metal lids.

Full swinging all-metal flour bins. All hardware is rust resisting nickeled.

Equipped with roll curtains in top and special panel cards.

Model 57-64

All cabinets are equipped with five glass jars, one glass tea jar, one glass coffee jar, and one glass sugar bowl.

Also equipped with cutting board and food chopper bracket.

Height 68 Inches, Width 40½ Inches, Depth 23 Inches.

	Each
No. 57-64GO—Golden oak finish	$64.00
No. 57-64W White enameled finish	71.00
No. 57-64G—Grey enameled finish	71.00
No. 57-64TG—Two tone grey oak finish	76.00
No. 57-64TB—Two tone brown oak finish	76.00

Weight each crated 210 pounds.

(*) F. O. B. Factory, Peru, Ind.

*KITCHEN CABINETS

ARIEL

These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain top.

Equipped with easy rolling casters and with ant-proof caster cups.

All metal bread and cake drawers with sliding metal lids.

Equipped with tilting sifter flour bins. All hardware is rust resisting nickeled.

Equipped with roll curtains in top and special panel cards.

Model 55-60

All cabinets are equipped with five glass jars, one glass tea jar, one glass coffee jar, and one glass sugar bowl.

Also equipped with cutting board and food chopper bracket.

Height 68 Inches, Width 40½ Inches, Depth 25 Inches.

	Each
No. 55-60GO—Golden oak finish	$59.00
No. 55-60W White enameled finish	66.00
No. 55-60G—Grey enameled finish	66 00
No. 55-60TG Two tone grey oak finish	71 00
No. 55-60TB—Two tone brown oak finish	71.00

Weight each crated 205 pounds.

(*) F. O. B. Factory, Peru, Ind.

*KITCHEN CABINETS

ARIEL

These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain tops.

Equipped with easy rolling casters and ant-proof caster cups. All metal bread and cake drawers with sliding metal lids.

Full swinging all metal flour bins. All hardware is rust resisting nickeled.

Equipped with roll curtain in top and special panel cards.

MODEL 7-12

All cabinets are equipped with five glass spice jars, one glass tea jar, one glass coffee jar and one glass sugar bowl.

Also equipped with cutting board and food chopper bracket.

Height 68 Inches, Width 32 Inches, Depth 24 Inches.

	Each
No. 7-12GO—Golden oak finish	$64.00
No. 7-12W—White enameled finish	71.00
No. 7-12G—Grey enameled finish	71.00
No. 7-12TG—Two tone grey oak finish	76.00
No. 7-12TB—Two tone brown oak finish	76.00

Weight each crated 180 pounds.

(*) F. O. B. factory, Peru, Ind.

*KITCHEN CABINETS

ARIEL

These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain tops.

Equipped with rolling casters. All metal bread and cake drawers with sliding metal lids.

Tilting sifter flour bins.

Equipped with roll curtain in top.

MODEL 51-88

All cabinets are equipped with five glass spice-jars, one glass tea jar, one glass coffee jar and one glass sugar bowl.

Height 68 Inches, Width 40½ Inches, Depth 25 Inches.

	Each
No. 51-88GO—Golden oak finish	$50.00
No. 51-88W—White enameled finish	57.00
No. 51-88G—Grey enameled finish	57.00

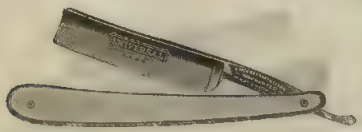
Weight each crated 185 pounds.

(*) F. O B. factory, Peru, Ind.

2078F

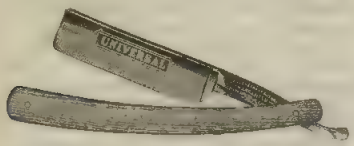
RAZORS

Universal.

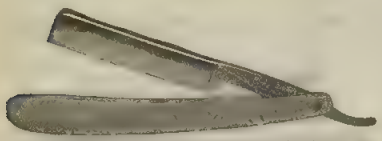


No. 295SF—Flat ivory white handle, three-quarters hollow ground, crocus polished, gold etched square point, ⅝-inch wide. Weight, per dozen, 2 pounds. Per dozen.....$20.25

No. 295RP—Round point, otherwise same as No. 295SP. Per dozen..... 20.25



No. 536—Oval white ivory handle; extra fine full hollow ground, polished and gold etched square point, ⅝-inch wide blade. Weight, per dozen, 1⅞ pounds. Per dozen.....$18.50

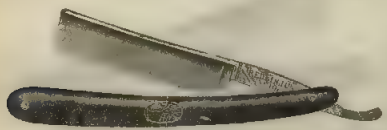


No. B 512—Flat black rubber handle, full hollow ground, glazed finish, square point, ⅝-blade. Weight, per dozen, 2 lbs. Per dozen $18.00

All above one in a box; half dozen in a carton.

Tree Brand.

No. 100—½ inch, "Red Injun" square point, full hollow ground, black oval rubber handle, milled tang Per dozen $36.00



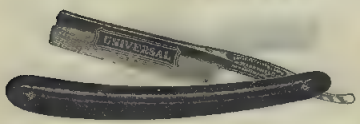
No. 101—⅝-inch, "Red Injun" square point, full hollow ground, black oval rubber handle, milled tang. Per dozen $36.00

No. 102—¾-inch, square point, full hollow ground, black rubber oval handle, milled tang, etched blade. Per dozen 36.00

RAZOR HANDLES

Black—For ⅝-inch razors, made of hard rubber, oval shape. Weight, per dozen, ½ pound. Per dozen $4.00

Universal.

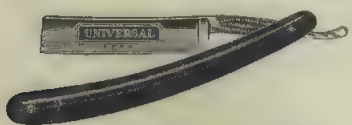


No. 334—Black rubber handle, full hollow ground, crocus polish, gold etched, hollow point, ⅝-inch wide. Weight, per dozen, 2 pounds. Per dozen $20.25

No. 334RP—Round point, without hollow point, ⅝-inch wide, otherwise same as above. Weight, per dozen, 2 pounds. Per dozen..... 20.25

No. 347—Tortoise oval celluloid handle; extra full hollow ground; crocus polish; gold etched. Barber's point, ⅝-inch wide. Weight, per dozen, 2 pounds. Per dozen.....$25.50

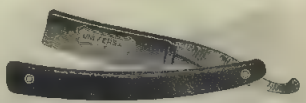
No. 354—Flat black rubber handle, full hollow ground. Pearl tang, frosted, gold etching, square point, ⅝-inch wide. Weight, per Per dozen $30.00



No. 344SP—Black rubber handle, full hollow ground, polished and etched. Square point, ⅝-inch wide. Weight, per dozen, 2 pounds. Per dozen $17.25

No. 344RP—½-inch blade, otherwise same as No. 344RP ⅝-inch. Per dozen $17.25

No. 344RP—Round point, otherwise same as above. Per dozen..... 17.25



No. 349—½-inch; square point; full hollow ground; black hard rubber handle; full crocus polished blade; gold etching on blade. Weight, per dozen, 1¾ pounds. Per dozen.....$21.00

No. 349—⅝-inch, otherwise same as above. Weight, per dozen, 2 pounds. Per dozen... 21.00

No. 349—¾-inch, otherwise same as above. Weight, per dozen, 2¼ pounds. Per dozen.. 21.00

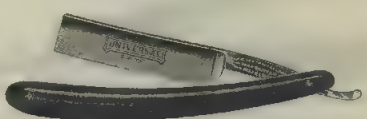
No. 349RP—⅝-inch, round point, otherwise same as above. Weight, per dozen, 2 pounds. Per dozen 21.00

No. 345—½-inch, square point; full hollow ground; white handle; otherwise same as above. Per dozen..... 21.50

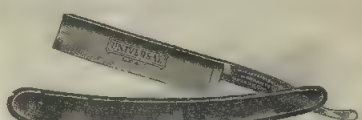
No. 345—⅝-inch, otherwise same as above. Per dozen 21.50

No. 345—¾-inch, otherwise same as above. Per dozen 21.50

No. 345RP—½-inch blade, otherwise same as No. 344RP ⅝-inch. Per dozen.....$21.50



No. 222—Black rubber handle, hollow ground, square shoulder and point. Polished and etched. ⅝-inch wide. Weight, per dozen, 2 pounds. Per dozen.....$10.50



No. 228—Red celluloid handle, hollow ground, square shoulder, polished and etched square point, ⅝-inch wide. Weight, per dozen, 2 pounds. Per dozen.....$12.75

No. 228RP—Round point, otherwise same as above Per dozen..... 12.75

All above, one in a box.

FLOOR LAMPS

No. 2244—2 Light—Black and gold finish. Height 61 inches. Pull chain sockets with silk cord. Silk shade 24 inches in diameter. Black and gold colors.
Each $66.00
No. 2244½—Without shade. Each 22.00

No. 2217—2 Light—Rustic bronze finish. Height 62 inches. Pull chain sockets with silk cord. Silk shade 24 inches in diameter. Black and gold colors.
Each $50.00
No. 2217½—Without shade Each..... 26.00

No. 2248—2 Light—Black and gold finish. Height 62 inches. Pull chain sockets. Parchment shade, hand decorated. 18 inches in diameter. Eight foot silk cord and 2 piece plug. Each..... $55.00
No. 2248½—Without shade. Each 35.00

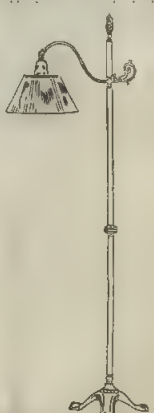
No. 2246—2 Light—Antique gold and black finish. Height 62 inches. Pull chain sockets. Parchment shade, hand decorated, 18 inches in diameter. Eight foot silk cord and 2 piece plug. Each..... $50.00
No. 2248½—Without shade. Each..... 30.00

No. 1217—Rustic bronze finish. Height 62½ inches. Extension 11 inches. Rigid arm. No. 30 parchment shade, hand decorated, 12 inches. Push button socket. Eight foot silk cord and 2 piece plug. Each $33.00
No. 1217½—Without shade 25.00

No. 1244—Black and gold finish. Height 61 inches. Extension 10 inches. Swivel arm. No. 29 parchment shade, hand decorated, 12 inches. Push button socket. Eight foot silk cord and 2 piece plug. Each $27.00
No. 1244½—Without shade 20.00

No. 1248—Black and gold finish. Ht. 62 in. Extension 13 in. No. 27 parchment shade hand decorated, 12 inches. Push button socket. 8 foot silk cord and 2 piece plug. Each..$50.00
No. 1248½—No shade. Each 35.00

No. 1247—Dobre grey finish. Height 57 in. Extension 10 in. Swivel arm. No. 26 parchment shade, hand decorated, 12 inches. Push button sockets. Eight foot silk cord and 2 piece plug. Each $50.00
No. 1247½—No shade 35.00



No. 1246—Antique gold and black finish. Height 62 inches. Extension 11 inches. Rigid arm. No. 25 parchment shade, hand decorated, 12 inches. Push button socket. 8 foot silk cord and 2 piece plug. Each..$45.00
No. 1246½—No shade 30.00

LANTERNS

SUPREME

Hot Blast

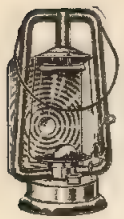
Bright tin. Will burn 30 hours on one filling.

A very strong, durable and convenient hot blast lantern. Equipped with an inside lift and large, well placed brass filler. Easy to light and fill. Latest improvements including positive secured locking globe lift, safety lock-in burner, dome shaped, solderless oil fount and stamped tubes.

Per dozen

No. 210—Height 13¼ in., No. 1 burner with ⅝ in. wick, No. 0 globe, weight per doz. 28½ lbs. $12.00

One half dozen in a case.



Hot Blast, Dash

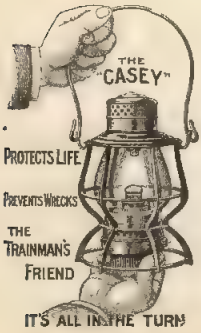
Bright tin. Red enameled. Will burn 30 hours on one filling

A very strong, durable and convenient Hot Blast dash lantern. Equipped with an inside lift and large, well placed brass filler. Easy to light and fill. Latest improvements including positive secured locking globe lift safety lock-in burner, dome shaped solderless oil fount, stamped tubes and bracket.

Per dozen

No. 215—Height 13¼ in No 1 burner with ⅝ in. wick, No. 0 globe, weight per dozen 38 lbs.....$21.00

One half dozen in a case



"Casey" Railroad

Will stay lit under the worst conditions of the wind and weather and withstands the roughest handling.

Full steel-guard frame. The top ring with handle-lugs stamped out of a single sheet of flat steel, body ring is also from flat steel. Flat sheet steel vertical guards. Guards are riveted into top ring and tongued and riveted into body ring.

Per dozen

Casey Railroad—Weight per dozen 36 lbs.....$30.00

One dozen in a box.

ELECTRIC LANTERNS

DELTA

Cold rolled steel case. Red enameled finish baked on. Wire bail, folding handles, nickel plated trimmings, deep silver plated reflector. Nickel plated sliding switch. Complete with necessary connections.

Operates on two regular 6 dry cell batteries, giving about 30 hours actual service. Throws a strong, white light over 100 feet ahead.

Each

No. 10—7½x3x5½ in. case with 2.8 volt bulbs, **without batteries**, weight each 2½ lbs. $2.75

One in a box.

GASOLINE LANTERNS

"NULITE" MATCH-LITE

Light with a Match

Finished and polished nickel plated, a lighting marvel for out-of-door use in city, town and country. Unaffected by high wind, rain, snow and sleet. Ideal for farmers, ranchmen, planters, dairymen, poultrymen, etc. 400 candle power. With built in pump. Each

No. 3M -Height overall 13 in., capacity 1 qt., burns 12 to 14 hours on one filling of common motor gasoline. Two No. 1B mantles, straight removable generator, No. 700 mica chimney, complete with wrench, tip cleaner, rubber washer and instructions, wt. each 3½ lbs.....$8.00

One in a carton

GASOLINE LAMPS

"NULITE" MATCH-LITE

Light with a Match

Nickel plated finish, white embossed, or blue tinted shade, most popular style of match generating, match lighting lamp, faultless lamp without wick and chimney. Does not throw a smoke, odor, grease, dirt, or is not dangerous. 400 candle power.

Height over all 22 in., two No. 1B rag mantles, No. 110 shade, capacity 3 pints, burns 14 hours on one filling, complete with wrench, tip cleaner, extra rubber washer, and instructions, weight each 6 lbs.

Each

No. 110M —With white embossed shade $9.00

No. 110MB—With blue tinted shade 10.00

One in a carton.

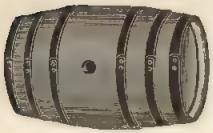
Highly nickel plated finish, white embossed shade. Straight removable generator. Does not throw a smoke, odor, grease, dirt or is not dangerous. 400 candle power.

Each

No. 210M -Height overall 17⅛ in., two No. 1B rag mantles, No. 199 shade, capacity 1 qt., burns 12 to 14 hours on one filling. Complete with wrench, extra generator pump and tip cleaner, wt. each 4½ lbs..$8.00

One in a carton

PURE LINSEED OIL



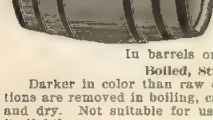
RAW AND BOILED

Raw, Strictly Pure
Especially adapted for outside work, does not dry as quickly as boiled oil, but has more elasticity. Also used as an animal physic.
Per gallon .....$....

In barrels or jacket cans.

Boiled, Strictly Pure
Darker in color than raw oil. The fatty and greasy portions are removed in boiling, causing it to move quickly, unite and dry. Not suitable for use in white paint as it darkens it slightly.
Per gallon .....$....
In barrels or jacket cans.
Note—Extra charge for jacket cans

TURPENTINE



PURE GUM SPIRITS
For Industrial Purposes
Used for thinning paint to make it spread more readily and dry quicker. Especially for inside work, also used in varnish.

Per gallon
Barrel or bulk .....$....
5 gal cans, 2 in a crate .....
5 gal tip over can, 1 in a crate .....

PINE TAR

Carefully prepared from the best North Carolina pine, is cooling and healing, and can be applied with Oakum to diseased feet with excellent results.

Size can	1 pt.	½ pt.
Per dozen	$2.40	1.80

COAL TAR

Barrels	Per barrel $10.00
½ Barrels	Each 6.00

NEATS FOOT OIL

No. 1 .....Per gallon $1.25
Extra charge for jacket can

HARNESS OIL

Per gallon
Harness Oil—Best for preserving leather, makes harness waterproof and pliable $1 50
Extra charge for jacket can.

FISH OIL

No. 1 .....Per gallon $1.25
Extra charge for jacket can.

LIME

Best grade lime.

Per barrel
Lime $3.00
Approximate weight per bbl. 180 lbs.

CEMENT

PORTLAND

Best grade cement. Per bag
Portland—In 100 lb. bags.... .....$1.50
4 bags to the barrel.

LANTERNS

SUPREME

Cold Blast, Short Globe Style
Bright tin. Will burn 48 hours of continuous 10 candle power bright white light, absolutely wind proof, new inside lift patented. Positive standing bail, large brass oil filler, rising cone, locked-in safety burner, with 1 inch wick, directly accessible for cleaning and lighting. Every single part is hand finished. Exclusively designed.

Per dozen
No. 162—Height 14½ in., standard short globe, No. 2 C. B. rising cone burner, weight per dozen 40 lbs...$24.00

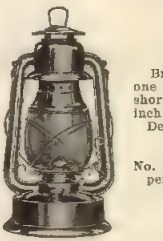
One half dozen in a case.

Cold Blast, Short Globe Style
Bright tin. Will burn 35 hours of continuous 10 candle power bright white light, absolutely wind proof. Dome shaped solderless oil fount, with large brass oil filler, special cold blast tubes, perfect standing bail, new inside lift. Locked-in safety rising cone burner with 1 inch wick exposed for easy lighting, trimming and cleaning.

Per dozen
No. 160—Height 14½ in., standard short globe, No. 2 C. B. rising cone burner, weight per dozen 37 lbs..$21.00

One half dozen in a case.
No. 61 Same as No. 160 except has brass fount and red enameled frame, weight per dozen 40 lbs....$24.00
One quarter dozen in a case.

LITTLE SUPREME



PLAIN GLOBE

Bright tin. Will burn 30 hours with one filling. Strongly constructed. Has short globe No. 0 C. B. burner with ⅝ inch wick.
Dependable in operation.

Per dozen
No. 150—Height 11⅝ in., weight per dozen 25 lbs. $15 00

RUBY GLOBE

Bright tin. Will burn 30 hours with one filling. Strongly constructed. Has junior short ruby globe. No. 0 C. B. burner with ⅝ inch wick.

Per dozen
No. 151—Height 11⅝ in., weight per dozen 25 lbs....$18.00
One-half dozen in a case.

CHAMPION
SPARK PLUGS

Dependable for Every Engine

CHAMPIONS
In Blue Boxes

The concentration of the Champion Spark Plug Line is of very great importance to every dealer in automotive equipment. It means a more complete stock with a smaller investment, a much more rapid turn-over and more profit.

No. 1 Price 75c.
⅛ Standard

Auburn Durant 6
Gardner Haynes
Lexington Locomobile
Marmon (Little)
Reo 6 (New)
Stearns-Knight
Studebaker Standard 6
Stutz 4
Velie (from '26)
Willys-Knight Light 6

No. 2 Price 75c.
⅛ Regular

Cadillac Diana
Chrysler Flint
Hupmobile 4 & 8
Jewett Lincoln
Moon Paige
Overland 6
Overland Whippet
Packard (to '26)
Pierce Arrow
Willys-Knight Great 6

No. 3 Price 75c.
⅛ Long Regular

Chevrolet Packard (from '26)
Dodge Brothers Pontiac Star 4
Ajax Cleveland Stephens
Chandler (from '23, Hupmobile 6 Oakland (from '24)
Studebaker Big 6 and Erskine 6
Yellow Cab

No. 4 Price 75c.
⅛ Long Body Regular

Chandler (to '23) Nash (Light 6)
Jordan Peerless
Marmon Star 6
Maxwell Willys-Knight 4

No. 6 Price 75c.
⅛ Long Special

Buick Durant 4 Gray
Nash (Big and special 6)
Oakland (to '24)
Oldsmobile 4 & 6
Rickenbacker
Velie (to '26)

No. 7 Price 75c.
½ Inch Long Standard

Overland 4
Reo
Most Stationary and Marine Engines

CHAMPION
SPARK X PLUGS

For Ford Cars, Trucks and Fordson Tractors

X Long Price 60c.
½ Inch, Long

CHAMPION X
In Red Boxes

Fifty Million Champion X Spark Plugs have been used since 1911 as standard equipment by the Ford Motor Company. It is recognized the world over as the most efficient spark plug for Ford Cars, Trucks and Fordson Tractors, and is the fastest selling motor equipment item in the automotive industry.

CHAMPION METRIC TYPES
Packed in Blue Boxes

No. 8 Metric Standard
Duesenberg
Rolls Royce
Stutz 8
Price 75c.

No. 9 Metric Long
Hudson (from '24)
Essex
Willys Ste. Claire
Price 75c.

No. 12 Metric Motorcycle
For Motorcycles
Price 75c.

No. 14 Metric
Fageol Safety Coach 5
Excelsior
Indian
Price 75c.

CHAMPION Truck Special

⅞ inch
Special heavy service plug for buses and extra heavy duty trucks.
Price 75c.

CHAMPION Priming

½ inch
⅞ inch
Metric
A Time and Battery Saver
Price $1.00

CHAMPION
Special Types

Plug Type		Price
A-14	½ in. Standard	$0.75
A-34	½ in. Ex. Long	.75
B-83	¾ inch, Long ..	.75
AF-53	⅜ inch, Long Standard, for Franklin	.75

CHAMPION CORES
Gaskets Furnished

Core	Plug Type	Price
A-104	Nos. 1, 2, 8, 9	$0.40
A-204	Nos. 3, 4, 7.. ..	.40
C-504	No 6	.40
A-105	X-A15	.30
A-205	X Long-A25	.30
H-104	Priming	.40

Extra Gaskets 4c each

DEALERS PRICE LIST

	100 Lots	Less than 100	List
Champion X Long in red boxes	$.41	$.45	$.60
Champions in blue boxes (including all special and metric types listing @ 75c.)	.50	.53	.75
Priming Plugs	.65	.70	1.00
Racing and Aviation Types	.85	90	1.50
Champion X and X Long Cores	.21	.22	.30
Champion Blue Box Cores	.25	.27	.40

Champion Spark Plugs are Guaranteed to give absolute satisfaction to the user, or full repair or replacement will be made.

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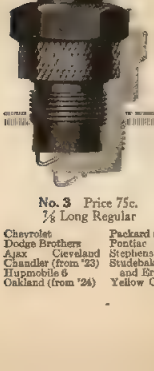
No. 1 Price 75c.
⅞ Standard

Auburn Durant 6
Gardner Haynes
Lexington Locomobile
Marmon (Little)
Reo 6 (New)
Stearns-Knight
Studebaker Standard 6
Stutz 4
Velie (from '26)
Willys-Knight Light 6

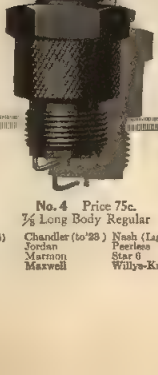
No. 2 Price 75c.
⅞ Regular

Cadillac Diana
Chrysler Flint
Hupmobile 4 & 8
Jewett Lincoln
Moon Paige
Overland 6
Overland Whippet
Packard (to '26)
Pierce Arrow
Willys-Knight Great 6



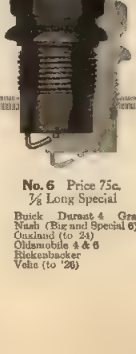
No. 3 Price 75c.
⅞ Long Regular

Chevrolet
Dodge Brothers
Ajax Cleveland
Chandler (from '23)
Hupmobile 6
Oakland (from '24)
Packard (from '26)
Pontiac Star 4
Stephens
Studebaker Big 6 and Erskine 6
Yellow Cab



No. 4 Price 75c.
⅞ Long Body Regular

Chandler (to '23)
Jordan
Marmon
Maxwell
Nash (Light '6)
Peerless
Star 6
Willys-Knight 4



No. 6 Price 75c.
⅞ Long Special

Buick Durant 4 Gray
Nash (Big and Special 6)
Oakland (to '24)
Oldsmobile 8 & 6
Rickenbacker
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Overland 4
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Packed in Blue Boxes

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Rolls Royce
Stutz 8
Price 75c.

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Essex
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No. 12 Metric Motorcycle
For Motorcycles
Price 75c.

No. 14 Metric
Pagoel Safety Coach 8
Excelsior
Indian
Price 75c.

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A Time and Battery Saver
Price $1.00

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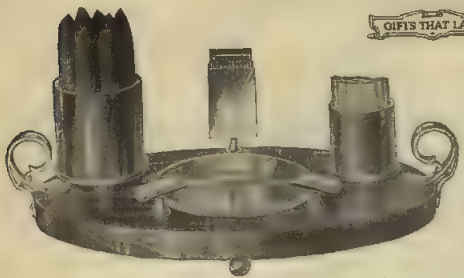
Champion Spark Plugs are Guaranteed to give absolute satisfaction to the user, or full repair or replacement will be made.

America's Richest, Choicest and Most Beautifully Grained Solid Genuine Mahogany Ash Trays and Smoker's Sets

All have Highest Quality Heavily Silver Plated Fittings. The construction and finish of these articles are unsurpassed. Priced very low in this selling.

IDEAL AND PRACTICAL BIRTHDAY OR CHRISTMAS GIFTS

GIFTS THAT LAST



OVAL SMOKER'S SET

Solid mahogany. Beautifully grained. Highest quality silver plated fittings. Length, 12¾ inches. Width, 7¼ inches. Glass ash tray, 5 inch diameter.
No. 3A334 Each $15.00

SMOKER'S SET

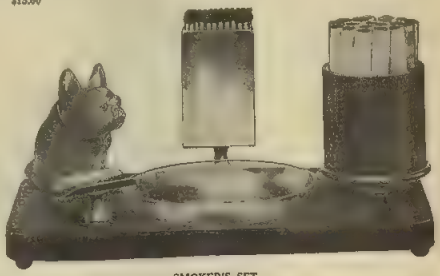
Solid mahogany. Beautifully grained. Highest quality silver plated fittings. Length, 6¾ inches. Width, 4¾ inches. 4-inch glass ash tray.
No. 3A338 Each $6.50

ASH TRAYS

Solid mahogany, silver plated fittings. Removable glass lining.

No. 3A350 Diameter, 6¾ inches, each .. $5.50

No. 3A351 Diameter, 7¾ inches, each. . . $6.00

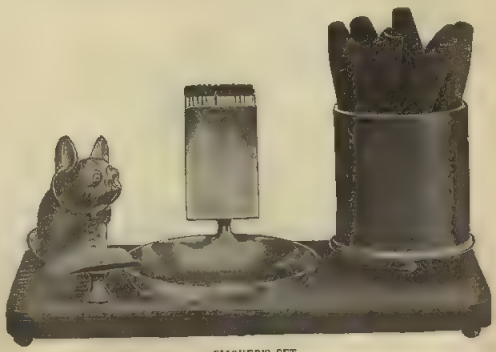


SMOKER'S SET

Solid mahogany. Beautifully grained. Highest quality silver plated fittings. Length, 8¼ inches. Width, 4¾ inches. 4-inch glass ash tray.
No. 3A339 Each $8.00

OBLONG SMOKER'S SET

Solid genuine mahogany, case piano finish. Rich Flemish grained. Highest quality plate silver fittings. Rich Length, 12½ inches. Width 8 inches
No. 3A38X55 Each $30.75



SMOKER'S SET

Solid mahogany. Beautifully grained. Highest quality silver plated fittings. Length, 9¼ inches. Width, 4¾ inches. 4-inch glass ash tray.
No. 3A340 Each. $3.75

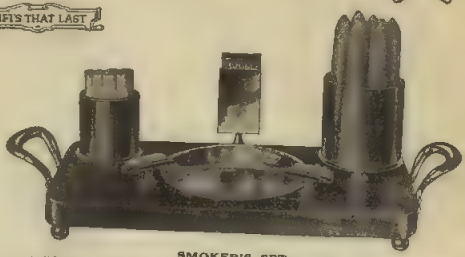
America's Richest, Choicest and Most Beautifully Grained Solid Genuine Mahogany Smoker's Sets

ALL HAVE HIGHEST QUALITY SILVER PLATED FITTINGS

GIFTS THAT LAST

SMOKER'S SET

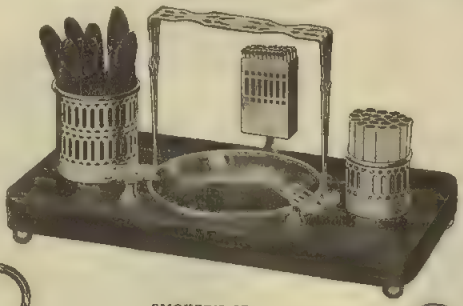
Solid mahogany, beautifully grained. Highest quality silver plated fittings. 5-inch removable glass lining. Diameter, 6¼ inches. Height, 8¼ inches. A very distinctive pattern.
No. 3A326 Each **$10.00**



SMOKER'S SET

Solid mahogany. Beautifully grained. Highest quality silver plated fittings. Length, 12 inches. Width, 6½ inches. Glass ash tray, 5-inch diameter.
No. 3A335 Each **$15.00**

GIFTS OF THIS NATURE HIGHLY PLEASE THE GENT. VERY ACCEPTABLE AS BIRTHDAY OR CHRISTMAS PRESENTS.



SMOKER'S SET

Massive genuine mahogany base, beautifully grained. Pierced design, highest quality, silver plated fittings. Length, 12 inches. Width, 6½ inches. Height, 6¼ inches. Glass ash tray, 5-inch diameter.
No. 3A356 Each **$16.25**

THE CONSTRUCTION AND FINISH OF THESE ARTICLES ARE UNSURPASSED. THE PRICES ARE VERY LOW CONSIDERING THE QUALITY IS THE BEST

SMOKER'S SET

Solid mahogany, beautifully grained. Highest quality silver plated fittings. Diameter, 10 inches. Height, 11½ inches. Glass ash tray, 5-inch diameter.
No. 3A358 Each **$19.00**

SMOKER'S SET

Solid mahogany, beautifully grained. Highest quality silver plated fittings. Length 12 inches. Width, 6¼ inches. Height 11½ inches. Glass ash tray, 5-inch diameter.
No. 3A355 Each **$15.00**

GREBE RADIO RECEIVING SETS

GREBE RADIO
TRADE MARK

THE RADIO SUPREME

The Grebe Engineers have perfected a Broadcast Receiver of revolutionary design, which gives you all of the joys of radio with none of its drawbacks. More than ten years of careful scientific development by the pioneer manufacturer of modern radio has reduced the old-fashioned antenna to a silk covered wire, twenty feet long, which may readily be concealed behind the picture moulding or run along the base board. This short wire brings in the music far clearer and with truer tone qualities.

Now, you may have those wonderful radio parties and concerts without an outdoor antenna, cumbersome storage battery, loop or unsightly wire of any kind.

The Grebe Broadcast Receiver is contained in an attractively finished walnut cabinet, which harmonizes with the most tastefully furnished drawing-room As compartments are provided in this cabinet for all necessary batteries, no wires are visible.

The broadcasts from stations throughout the length and breadth of the Country, will come to you through this Receiver, as its wave length range covers all broadcasting.

Radio Frequency Amplification, as embodied in this Receiver, eliminates the unpleasant noises so objecton able in other types, and gives you crystal-clear reception of the program you desire.

It is unnecessary for you to employ a radio man to install this Receiver, as anyone, in a few moments, may set the silken wire and make necessary ground connection to a convenient pipe or radiator. A single switch controls the operation, and you may use either loud speaker or telephone headset.

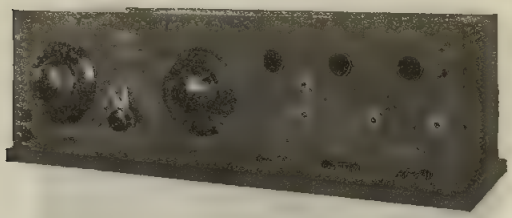
Seven Points of Satisfaction.

1—No outdoor antenna—or loop.
2—Uses all kinds of tubes (4 of them) in any desired combination.
3—Employs the perfect combination of Regeneration and Tuned Radio Frequency Amplification with only 2 tuning dajustments.
4—Receives all broadcasting.
5—Tuning Dial graduated in wavelengths
6—May be set up immediately, and successfully operated—anywhere—by anyone.
7—Complete, self contained Receiver, in attractively finished walnut cabinet, with compartments for A and B batteries.

Type CR12—Grebe Radio Receiving Set (less Tubes, Phones and Batteries). Each..... ....$175.00

Note—All Receiving Sets are quoted less Tubes, Phones, Plugs, Batteries and Antenna. This set requires when used with Dry Cells the following: 4 only C299 Tubes—4 only No. 429 Tube Adapters—1 pair Head Phones- 4 only No. 763 "B" Batteries—4 only No. 6, S. and Q Dry Batteries. **For use with Storage Battery** this set requires the followng: 1 only C300 Detector Tube and 3 only 301A Amplifying Tubes—4 only No 763 "B" Batteries—Head Phones and 6 volt Storage Battery.

GREBE TYPE CR9



This is a complete receiver of the single circuit type employing the Armstrong Regenerative Circuit, with a waving length range of 150 to 3,000 meters.

Tuning is accomplished by means of two "tapered grip" dials. The literal "hair breadth" adjustments so necessary to efficient operation are readily accomplished by "Tangent Wheel" Verniers of unique design

This receiver possesses absolute electrical efficiency and rugged mechanical strength. Each tuning unit is separately shielded. All connections are positive, all wiring rigid and strong.

It is extremely simple to operate Once installed, and properly equipped with the necessary tubes, batteries and telephones, it can be depended upon to deliver dependable service with little attention. This is one of the most popular receivers produced by the Grebe Engineers.

Pleasing Appearance.

Every real relay-man takes pride in the trim, efficient appearance of his station. In these receivers it has been found possible to arrange the elements in a pleasing, symmetrical manner, and this has been done with increased electrical efficiency, mechanical strength and ease of control.

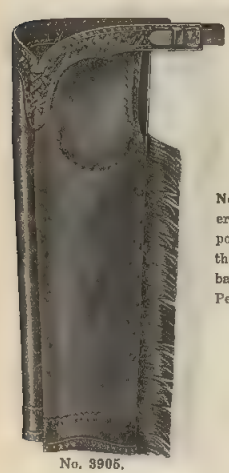
Cabinet is finished in weathered oak and makes a **striking appearance.**

Type CR9—Grebe Receiving Set (less Tubes, Batteries and Headsets.) Each.....$130.00

For further information regarding Grebe Radio Receiving Sets write for special booklets illustrating and describing their entire complete line. WE ARE NORTHWESTERN DISTRIBUTORS.

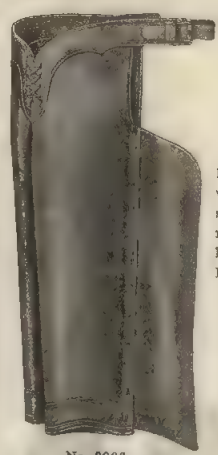
Note—All Receiving Sets are quoted less Tubes, Batteries, Phones and Antenna This set requires 1 only C300 Detector Tube—2 only C301A Amplifying Tubes—2 only No. 767 "B" Batteries Head Phones and 6 volt Storage Battery and Antenna.

CHAPAREJOS



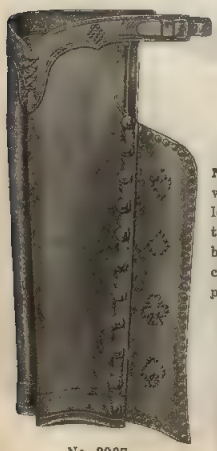
No. 3905.

No. 3905—Mohawk leather, buckskin sewed, belt pockets and bottoms, thong laced legs, fringed, basket stamped dip belt. Per pair $42.40



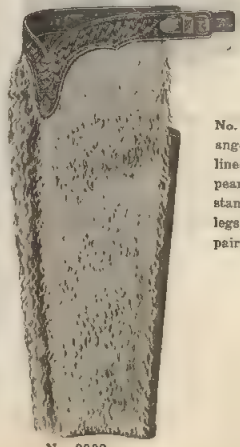
No. 3906.

No. 3906 — Detachable wing chaparejos, lock stitch, waxed thread, two rows stitched dip belt, laced legs, side pockets. Per pair $42.00



No. 3907.

No. 3907 — Detachable wing chaparejos, spotted, lock stitch, waxed thread, two rows stitched dip belt, laced legs and conchas, wings, spotted side pockets. Per pair.$47.00



No. 3908.

No. 3908—Black or white angora fronts, canvas lined, Mohawk or soft pearl color backs, basket stamped dip belt, laced legs, side pockets. Per pair $57.00

CUFFS AND CHAPAREJOS

LEATHER CUFFS

No. 190.

No. 220

Sizes	6-inch	7-inch
No. 190—Russet leather, flower stamped, snap buttons. Per pair	$2.20	$2.60
No. 220—Russet leather, flower stamped, snap buttons. Per pair	2.20	2.60

No. 1157.

No. 290.

Youth's Cuffs. No. 160

Sizes	6-inch	7-inch
No. 1157—Russet leather, center stamped, snap buttons. Per pair	$2.20	$2.60
No. 290—Diamond pattern, russet leather, nickel or brass spotted. Per pair	4.40	4.60

No. 160—4½x6½—Russet leather, flower stamped center, snap buttons. Per pair $1.40

CHAPAREJOS

No. 3901—Flesh side out, Mohawk leather, 4-inch wing, snap and ring fastening. Per pair 37.40

No. 3902—Grain side out, otherwise same as No. 3901. Pair. $37 40

No. 3904 — Mohawk leather, dip belt, laced legs, lock stitch, wax thread, two row stitching. Per pair . . $41.60

FILES

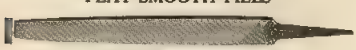
FLAT SECOND CUT FILES

Used by Mechanics for Finishing Metals Previously Prepared by the Bastard, to be Followed by Emery Processes

Inches	8	10	12	14
Approx. wt., per dozen, lbs.	4	7	12½	19
Black Diamond Per doz.	$6.10	8.10	11.00	15.30

8 in. one dozen; balance, one half dozen in a box.

FLAT SMOOTH FILES



Used by Woodworkers.

Inches	6	8
Approx. wt. per doz., lbs.	1½	4
Black Diamond --Per doz.	$5.30	6.60

Inches	10	12	14	16
Approx. wt per doz., lbs.	7	12½	19	27
Black Diamond—Per doz.	$8.70	12.10	16.70	22.30

6 to 8 in. one dozen; balance, one half dozen in a box.

HALF ROUND SMOOTH FILES

Used preparatory to the Emery processes of finishing.

Inches	6	8
Approx. wt. per doz., lbs.	1½	3¼
Black Diamond—Per doz.	$7.10	8.90

Inches	10	12
Approx. weight, per dozen	6	11
Black Diamond—Per doz.	$10.70	13.90

6 to 8 in. one dozen; balance, one half dozen in a box.

HALF ROUND BASTARD FILES

Used in general machine shop work, the flat side for general purpose and the convex side in preparing and sharpening the great variety of concave work.

Inches	6	8
Approximate weight per dozen, lbs.	1½	3¼
Black Diamond—Per doz.	$6.10	7.50

Inches	10	12	14	16
Approx. wt. per doz., lbs.	6	11	17	24½
Black Diamond—Per doz.	$9.10	11.80	15.50	20.60

6 to 8 in. one dozen; balance, one half dozen in a box.

WARDING BASTARD FILES

Considerably Used by Jewelers and Machinists, but More Especially by Locksmiths for Filing the Ward Notches in Keys

Inches	4	5	6	8
Approx. weight per dozen, lbs	⅓	⅝	1	1⅓
Black Diamond—Per dozen	$4.00	4.50	4.90	6.40

One dozen in a box.

FILES

KNIFE BASTARD FILES

Double Cut, Taper Sides, Shape of a Knife Blade, a Wedge from Back to Edge

Used in limited quantities, are in general use in work for which their shape adapts them.

Inches	4	6
Approx. wt. per doz., lbs.	½	1
Black Diamond—Per doz.	$5.40	6.90

One dozen in a box.

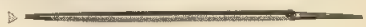
PLUMB'S SPECIAL SAW FILES

These special pattern saw files will do all the work of all hand saw files made.

The cutting qualities and life of any saw depends largely upon the way it is filed.

The designs of these special saws are the result of the cumulative experience of expert saw filers and they fulfill all the requirements of all patterns used for filing hand saws

Manufactured from special analysis steel, accurately cut, scientifically tempered and thoroughly tested after each manufacturing operation.



Per dozen

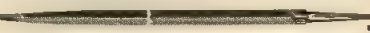
No. 5½—Size 5½x$\frac{5}{32}$ inch; is designed for filing small saws with 10 to 12 points and sharp gullets. This one pattern will do the same work as regular taper files from 3 to 3½ inches. Slim taper files from 4 to 4½ inches, and extra slim taper files from 5 to 5½ inches $2.40

Two dozen in a box

Per dozen

No. 7—Size 7x¼ inches, is designed for saws with 6 to 10 points. The long sweep makes for accurate filing. It will do the same work as regular taper files 3½ inches, slim taper files 4 inches, extra slim taper files 5 to 5½ inches, and double extra slim taper files 6 inches $3 00

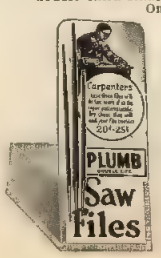
Three dozen in a box.



Per dozen

No. 8—Size 8x$\frac{5}{16}$ inches, is designed for large saws with 4 to 7 points, also wide enough to use the double edge for filing mill saws. The most economical pattern made—a stiff file with a long sweep for accurate work. It will do the same work as slim taper files 5 inches, extra slim taper files 6 inches, and double extra slimp taper files 7 inches $3.60

One dozen in a box



This lithographed display case free, on request, with your first order or with assortment.

Per asst.

No. 2—Assortment consists of 6 dozen assorted special saw files, two dozen 5½x$\frac{5}{32}$ in., three dozen 7x¼ in., and one dozen 8x$\frac{5}{16}$ in., complete with metal display case, weight per assortment, 5½ pounds $17.40

One assortment in a carton.

FILES

PLUMB'S "ALLWORK"

With Leather Sheath

Designed to supply the need for a general all around file. Useful and convenient. It is double cut, one side to remove metal quickly and single cut in the other to give a smooth finish. It meets all general requirements. Each file in a leather sheath. A handsome lithoed display case free with first order.

Per dozen

No. 10—Length including handle 10 in., weight per dozen 4½ lbs. $4.20

One dozen in a box.

RASPS

HALF ROUND CABINET RASPS

Second Cut

Used by cabinet, saddle-tree, pattern and last makers, also by gun stockers and wood workers generally.

Inches	10	12	14
Approx. weight per doz., lbs.	6	10	16
Black Diamond—Per dozen	$17.50	22.80	29.60

One half dozen in a box.

HALF ROUND WOOD RASPS

Used by wheelwrights and carriage makers, also by plumbers and marble workers.

Inches	10	12	14
Approx weight per dozen, lbs.	8	10	18
Black Diamond Per dozen	$13.70	18.70	24.80

One half dozen in a box.

HORSE RASPS

I X L BRAND

Half File

Inches	12	14	16
Approx. weight per dozen, lbs.	15	20	31
Per dozen	$12 80	17.80	24.40

Slim Half File

Inches	16	18
Approx. weight per dozen, lbs.	28	37
Per dozen	$21.50	25.90

Thin Slim Half File

Inches	20
Approx. weight per dozen, lbs.	45
Per dozen	$32.90

One half dozen in a box.

FILE CARDS

NICHOLSONS'

Varnished hardwood back and handle, hardened steel wire brush, attached to leather face, with cleaner.

Per dozen

No. 1—4¾x1½ in. face, length over all 10 in., weight per dozen 4 lbs. $3.60

One half dozen in a box.

OIL STONES

QUEER CREEK

Can Be Used with Oil or Water

A hard, medium coarse grained stone for coarse work.

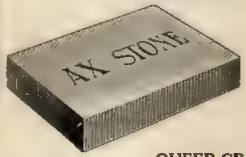
Per dozen

No. 10—6 in. long, 2 in. wide, ¾ to 1 in. thick, weight per dozen 11½ lbs. $4.20

No. 11—Mounted in Wood Box, otherwise same as above, weight per dozen 13½ lbs. 6.00

One in a carton.

AXE STONES



CORUNDUM

Per dozen

Corundum—3 in. long, 2 in. wide, ⅝ in., thick, weight per dozen 3 lbs. ...$3.00

One dozen in a box.

QUEER CREEK

Per dozen

Queer Creek—3 in. long, 2 in. wide, ⅝ in. thick, weight per dozen 3 lbs. $1.20

Two dozen in a box.

SCYTHE STONES

BLACK DIAMOND

Very fine grit, extremely sharp and fast cutting, flat octagon shape.

Per dozen

Black Diamond—10 in. long, weight per dozen 8½ lbs. $3.00

Three dozen in a box.

RADIAC BLUE

Steel Core

Shaped for quick work, steel core makes it practically indestructible.

Per dozen

Radiac Blue—10 in. long, weight per dozen 8½ lbs. ..$1.80

Three dozen in a box.

GREEN MOUNTAIN

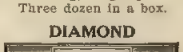
A very sharp gritted stone for quick work, round oval shape.

Per dozen

Green Mountain—10 in. long, weight per dozen 8½ lbs. $1.80

Three dozen in a box.

DIAMOND



Flat, with beveled corners, specially selected Huron grit, sand bed finish.

Per dozen

Diamond—9½ in. long, weight per dozen 10½ lbs. ..$1.80

Three dozen in a box

SILVER PLATED ON NICKEL SILVER

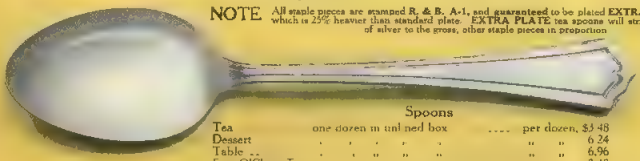
TRADE **R.&B.** MARK

BRIGHT FINISH

THE IDEAL PATTERN

Bright Finish

NOTE All staple pieces are stamped R. & B. A-1, and guaranteed to be plated EXTRA PLATE, which is 25% heavier than standard plate. EXTRA PLATE tea spoons will strip 50 dwts of silver to the gross, other staple pieces in proportion



Spoons

Tea	one dozen in unlined box	per dozen, $3.48
Dessert	" " "	" " 6.24
Table	" " "	" " 6.96
Five O'Clock Tea	" "	" " 3.48
Five O'Clock Tea half	gilded	" " 4.30

Flat Handle Forks

Medium	one dozen in unlined box	per dozen, $6.96
Dessert	" " "	" " 6.24

Illustrations Actual Size

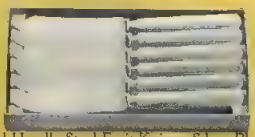
Solid Handle Steel Knives, Silver Plated

R. & B. 12 dwt., Medium size, per dozen, $9.40
R. & B. 12 dwt., Dessert " " " 9.20
R. & B. 6 dwt., " " " 7.40
R. & B. 6 dwt., " " " 7.20

Packed one-half dozen in box

No. 185 Child's Set

Three pieces in lined box . . . per set, $1.36



Solid Handle Steel Fruit Knives, Silver Plated

Packed one-half dozen in box . . . . . per dozen, $5.90

Cold Meat Fork

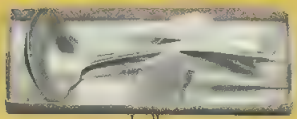
One in lined box each, $1.18

No. 183. Butter Knife and Sugar Shell

Two pieces in lined box per set $1.36

Berry Spoon

One in lined box each, $1.58



Ladles

One each in lined box

Cream, plain	each, $1.08
Gravy, "	" 1.34
Medium Soup, "	" 3.74

Illustrations One-Third Size

RB6-9

INTERNATIONAL SILVER CO.

SILVER PLATED ON NICKEL SILVER

TRADE **R.& B.** MARK

BRIGHT FINISH

THE IDEAL PATTERN

Bright Finish

NOTE All staple pieces are stamped R. & B. A-1, and guaranteed to be plated EXTRA PLATE, which is 25% heavier than standard plate. EXTRA PLATE ten spoons will strip 50 dwts. of silver to the gross, other staple pieces in proportion

Bouillon Spoon

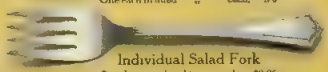
One doz. in unlined box, per doz., $6 12
Half " " lined " " " 6.66

Coffee Spoon

One doz. in unlined box, per doz., $3 26
Half " " lined " " " 3 54

Sugar Shell Plain

One doz. in unlined box, per doz., $6.24
One each in lined " each, .70



Individual Salad Fork

One doz. in unlined box, per doz., $8.06
Half " " lined " " " 8.62

Butter Spreader

One doz. in unlined box, per doz., $5 98
Half " " lined " " " 6.38

Orange Spoon

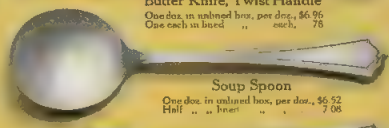
One doz. in unlined box, per doz., $5 96
Half " " lined " " " 6 24

Iced Tea Spoon

One doz. in unlined box, per doz., $5 28

Butter Knife, Twist Handle

One doz. in unlined box, per doz., $6.96
One each in lined " each, 78



Soup Spoon

One doz. in unlined box, per doz., $6 52
Half " " lined " " " 7 08

Oyster Fork

One doz. in unlined box, per doz., $5 64
Half " " lined " " " 6.40

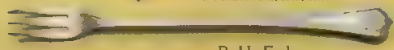
Baby Spoon

One in lined box, each, $0 60

Baby Set
Spoon and Food Pusher
Per set, $1 20

Food Pusher

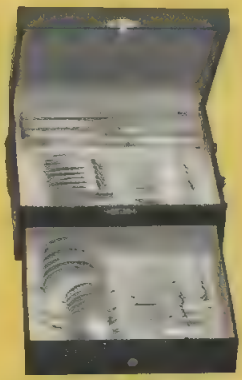
One in lined box, each, $0.60



Pickle Fork

One in lined box, each, $0 75
Twelve in unlined box, per doz., 8.06

Illustrations One-Half Size



OAK FINISH

No. 148 In Oak Chest, twenty-six pieces containing Six Tea Spoons, six Table Spoons, six Solid Handle Medium Knives, six Medium Forks, one Butter Knife, one Sugar Shell, $17 00
No. 145 Same as above in Flat Leatherette Case 15 06
No. 179 Same as above in Blue Compact Case 6 18
No. 181 Same as above in Paper Chest 15 32
Above sets with 12 dwt. Knives add $1 00 net per set

No. 150. Six Medium Knives } in rack box, 24 dwt. Knives, per set, $8.18
Six Medium Forks } with 6 dwt. Knives, per set, 7.18

No. 150D. Six Dessert Knives } in rack box, 12 dwt. Knives, per set, $7 72
Six Dessert Forks } with 6 dwt. Knives, per set, 6.72

Note: The Ideal is furnished in same combination as Manor

Illustration One-Third Size

RB6-10

INTERNATIONAL SILVER CO.

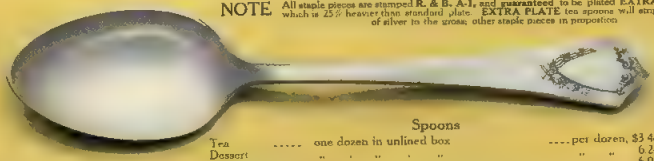
SILVER PLATED ON NICKEL SILVER

TRADE **R.&B.** MARK

FINISHED IN FRENCH GRAY

THE JEWEL PATTERN

NOTE All staple pieces are stamped R. & B. A-1, and guaranteed to be plated EXTRA PLATE, which is 25% heavier than standard plate. EXTRA PLATE tea spoons will strip 50 dwts. of silver to the gross; other staple pieces in proportion



Spoons

Tea	one dozen in unlined box	per dozen, $3 48
Dessert	" " " "	" " 6 24
Table	" " " "	" " 6 96
Five O'Clock Tea	" " " "	" " 3 48
Five O'Clock Tea, half	" " lined	" " 4 30

Flat Handle Forks

Medium	one dozen in unlined box	per dozen, $6.96
Dessert	" " " "	" " 6.24

Solid Handle Steel Knives, Silver Plated

R & B 12 dwt.	Medium size, per dozen $9 40	R & B 6 dwt.	per dozen $7 40
R & B 12 dwt.	Dessert " 7 20	R & B 6 dwt.	" 7 20

Illustrations Actual Size

Packed one half dozen in box

No. 185. Child's Set

Three pieces in lined box ---------- per set, $1.36

Solid Handle Steel Fruit Knives, Silver Plated

Packed one half dozen in box ---------- per dozen, $5.90

Cold Meat Fork

One in lined box ---------- each, $1.18

No. 183. Butter Knife and Sugar Shell

Two pieces in lined box ---------- per set, $1.36

Berry Spoon

One in lined box ---------- each, $1 58

Ladles

One each in lined box

Cream, plain	----------	each, $1.08
Gravy	"	" 1 34
Medium Soup	"	" 3 74

Illustrations One Third Size

RB6-11

INTERNATIONAL SILVER CO.

SILVER PLATED ON NICKEL SILVER

TRADE **R.&B.** MARK

FINISHED IN FRENCH GRAY

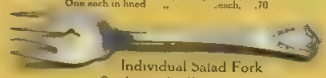
THE JEWEL PATTERN

NOTE All staple pieces are stamped **R. & B. A-1.** and **guaranteed** to be plated **EXTRA PLATE,** which is 25% heavier than standard plate. **EXTRA PLATE** tea spoons will strap 50 dwts. of silver to the gross; other staple pieces in proportion

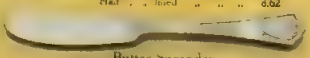
Bouillon Spoon
One doz. in unlined box per doz., $6 12
Half " " lined " " " 6.66

Coffee Spoon
One doz. in unlined box per doz. $3 26
Half " " lined " " " 3 54

Sugar Shell Plain
One doz. in unlined box per doz., $6.24
One each in lined " each, .70

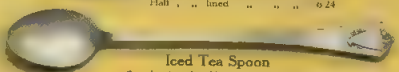


Individual Salad Fork
One doz. in unlined box, per doz., $8 06
Half " " lined " " " 6.62



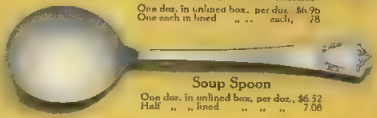
Butter Spreader
One doz. in unlined box per doz., $5 98
Half " " lined " " " 6 58

Orange Spoon
One doz. in unlined box per doz., $5 96
Half " " lined " " " 6 24

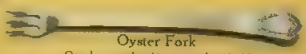


Iced Tea Spoon
One doz. in unlined box...per doz., $5 28

Butter Knife, Twist Handle
One doz. in unlined box, per doz., $6 96
One each in lined " " each, 78



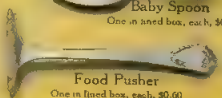
Soup Spoon
One doz. in unlined box, per doz., $6 52
Half " " lined " " " 7.08



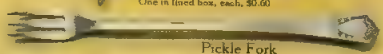
Oyster Fork
One doz. in unlined box per doz., $5 84
Half " " lined " " " 6 40

Baby Set
Spoon and Food Pusher
Per set, $1 20

Baby Spoon
One in lined box, each, $0 60

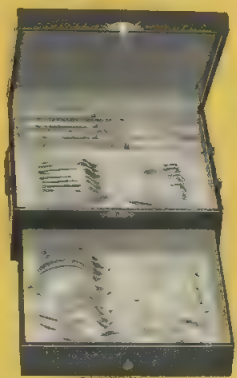


Food Pusher
One in lined box, each, $0.60



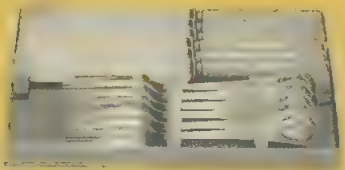
Pickle Fork
One in lined box..... each, $0 75
Twelve in unlined box, per doz., 8.06

Illustrations One-Half Size



OAK FINISH

No. 148. **In Oak Chest,** twenty-six pieces, containing: Six Tea Spoons, six Table Spoons, six Solid Handle Medium Knives, six Medium Forks, one Butter Knife, one Sugar Shell $17.00
No. 145. Same as above in Flat Leatherette Case 15.06
No. 181. Same as above in Paper Chest 15 32
Above sets with 12 dwt. Knives, add $1 00 list per set



No. 150. Six Medium Knives | in rack box, 12 dwt. Knives, per set, $8.18
Six Medium Forks | with 6 dwt. Knives per set, 7.18

No. 150D. Six Dessert Knives | in rack box, 12 dwt Knives, per set, $7 72
Six Dessert Forks | with 6 dwt Knives ..... per set, 6.72

Note: The Jewel is furnished in same combination as Manor

Illustration One-Third Size

RB6 12

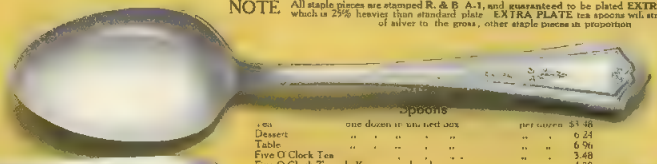
SILVER PLATED ON NICKEL SILVER

TRADE **R.&B.** MARK

FINISHED IN FRENCH GRAY

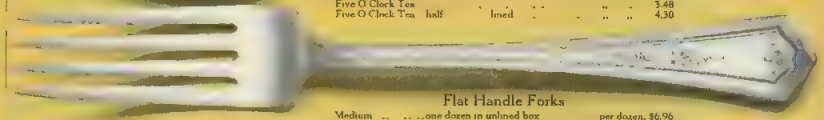
THE MANOR PATTERN

NOTE All staple pieces are stamped R. & B. A-1, and guaranteed to be plated EXTRA PLATE, which is 25% heavier than standard plate. EXTRA PLATE tea spoons will stand 50 dwts. of silver to the gross, other staple pieces in proportion



Spoons

	one dozen in unlined box	per dozen
Tea		$4 48
Dessert	" " " "	" " 6 24
Table	" " " "	" " 6 96
Five O Clock Tea	" "	" " 3 48
Five O Clock Tea half	lined "	" " 4 30



Flat Handle Forks

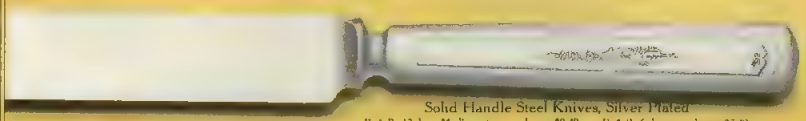
Medium	one dozen in unlined box	per dozen, $6.96
Dessert	" "	" 6.24

Hollow Handle Breakfast Knives

Per dozen ... $23 40

Illustrations Actual Size

Furnished also in Ideal and Jewel Patterns



Solid Handle Steel Knives, Silver Plated

R. & B. 12 dwt., Medium size, per dozen, $9.40 — R & B 6 dwt., per dozen, $7 40
R. & B. 12 dwt., Dessert " " " 9.20 — R & B 6 dwt., " " 7 20

Sugar Shell

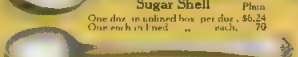
Plain
One doz. in unlined box, per doz., $6.24
One each in lined " each, .70

Coffee Spoon

One doz. in unlined box, per doz., $3 26
Half " " lined " " " 3 54

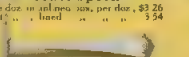
Butter Knife, Twist Handle

One doz. in unlined box, per doz. $6 96
One each in lined " each, .78



Iced Tea Spoon

One doz. in unlined box, per doz., $5 28



Food Pusher

One in lined box, each, $0.60

Butter Spreader

One doz. in unlined box, per doz., $5 96
Half " " lined " " " 6 38

Individual Salad Fork

One doz. in unlined box, per doz., $8.06
Half " " lined " " " 8.62

Solid Handle Steel Fruit Knife

Packed one-half doz. in box . per doz., $5 90

Orange Spoon

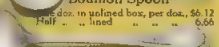
One doz. in unlined box, per doz., $5 96
Half " " lined " " " 6 24

Cold Meat Fork

One in lined box each, $ 18

Baby Spoon

One in lined box, each $0.60



Bouillon Spoon

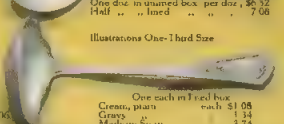
One doz. in unlined box, per doz., $6 12
Half " " lined " " " 6.66

Oyster Fork

One doz. in unlined box, per doz., $5 64
Half " " lined " " " 6.40

Berry Spoon

One in lined box each $1 58



Soup Spoon

One doz. in unlined box per doz., $6 32
Half " " lined " " " 7 08

Illustrations One-Third Size

Pickle Fork

One in lined box each $1 58 Twelve in unlined box per doz. $8 00

One each in Lined box

Cream, plain	each $1 08
Gravy "	1 34
Medium Soup	3 74

RBe 7

INTERNATIONAL SILVER CO.

SILVER PLATED ON NICKEL SILVER

TRADE **R.&B.** MARK

FINISHED IN FRENCH GRAY

THE MANOR PATTERN

NOTE All staple pieces are stamped R. & B. A-1, and guaranteed to be plated EXTRA PLATE which is 25% heavier than ordinary plate. EXTRA PLATE tea spoons will average [illegible] other staple pieces in proportion

No. 179 In Blue Compact Case, twenty-six pieces, containing Six Tea Spoons, six Table Spoons, six Solid Handle Medium Knives, six Medium Forks, one Butter Knife, one Sugar Shell ... $16.16

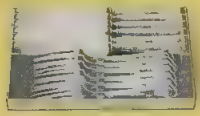
Twenty-six piece set same as above with 12 dwt. Knives ... $17.38

No. 185. Child's Set

Three pieces in lined box, per set, $1.40

No. 188 Baby Set

Educator Knife and Fork, 2 pieces in box ... per set, $1.20



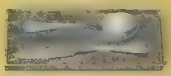
No. 150. Six Medium Knives, Six Medium Forks, in rack box, 2 dwt. Knives, per set, $8.18; with 6 dwt. Knives ... per set, 7.18

No. 150D. Six Dessert Knives, Six Dessert Forks, in rack box, 2 dwt. Knives, per set, $7.72; with 6 dwt. Knives ... per set, 6.72

No. 626 In Gray Service Case, twenty-six pieces containing Six Tea Spoons, six Table Spoons, six Solid Handle Medium Knives, six Medium Forks, one Butter Knife, one Sugar Shell ... $14.52

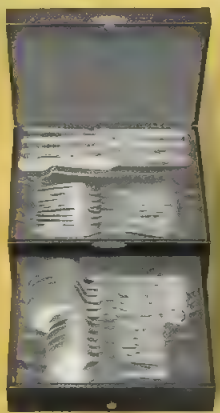
Twenty-six piece set same as above with 12 dwt. Knives ... $15.52

Illustrations One-Third Size



No. 183. Butter Knife and Sugar Shell

Two pieces in lined box ... per set, $1.36



No. 148. In Oak Chest, twenty-six pieces containing Six Tea Spoons, six Table Spoons, six Solid Handle Medium Knives, six Medium Forks, one Butter Knife, one Sugar Shell ... $17.00

No. 145 Same as above in Flat Leatherette Case ... 16.06

No. 181 Same as above in Paper Chest ... 15.32

Above sets with 12 dwt. Knives, add $1.06 per set

All Combination Sets

Complete with ware

Furnished also in Ideal and Jewel Patterns

No. 194. In Blue Compartment Case, twenty-six pieces, containing Six Tea Spoons, six Table Spoons, six Solid Handle Medium Knives, six Medium Forks, one Butter Knife, one Sugar Shell ... $15.88

Twenty-six piece set same as above with 12 dwt Knives ... $17.14

SILENT SALESMAN Red Devil PLIER ASSORTMENT

A Selection of 20 of the best selling slip joint pliers One of each (10 tools) mounted on a beautiful mahogany finish easel back display board, 10x24 inches.

Red Devil Pliers are your Fingers of Steel

Red Devil Pliers are your Fingers of Steel

This selection consists of 2 each of the following tools.

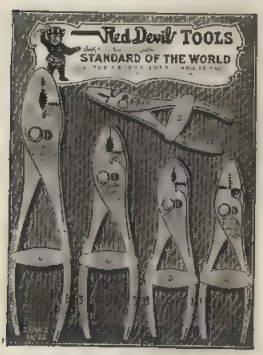
No. 3925—5½	inches	Each, $0.25	No. 825—8	inches	Each, $0.65
No. 3925—6½	inches	Each, .30	No. 1024—6½	inches	Each, 1.00
No. 924—6½	inches	Each, .60	No. 925—6½	inches	Each, .90
No. 825—5½	inches	Each, .50	No. 925—8½	inches	Each, 1.25
No. 825—6½	inches	Each, .50	No 1226—7	inches	Each, 1.35

No. EB1226—Assortment . . . . . Total Resale Price, $14.60

SILENT SALESMAN Red Devil "DISPLAY BOARDS"

COMBINATION SLIP JOINT CUTTING PLIERS

Increase Your Sales
Increase Your Profits
Ask No Salary



No. E. B. 1024.

This Outfit consists of one highly polished Easel Board and One dozen pliers assorted as follows:—

			Each
3	No. 1024	Pliers, 5¼ in. Original Thin Nose	$1.00
4	No. 1024	Pliers, 6½ in. Original Thin Nose	1.10
3	No. 925	Pliers, 6½ in. Standard Pattern	1.00
1	No. 925	Plier, 8 in. Standard Pattern	1.20
1	No. 925	Plier, 10 in. Standard Pattern	1.50

No. EB1024—Assortment . . . Total Resale Price, $13.10

Note.—Coppered and Blue Nickeled Finish. For detailed description of these Pliers, see Page 343.

Packed.—The five pliers shown on the panel and the additional seven pliers are packed in one box. Weight, 6½ lbs.

Work 24 Hours Per Day
Bring Satisfied Customers
Require No Attention

No. E. B. 725.

This Outfit consists of one 7x11 inch Display Board and One Dozen Pliers assorted as follows:

			Each
3	No. 725— 6½	in. Standard Pattern	$0.65
5	No. 725— 8	in. Standard Pattern	.75
4	No. 725—10	in. Standard Pattern	1.00

No. EB725—Assortment, Gun Metal Handles, Polished Nose . . . . . Total Resale Price, $9.70

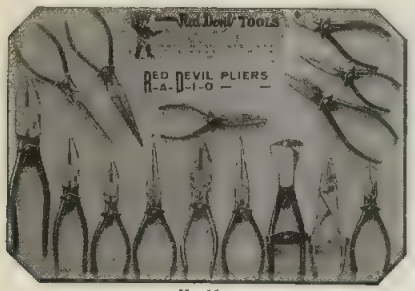
Note.—These Pliers are listed on Page 344.

Packed. The three pliers shown on the panel and the additional nine pliers are packed in one box. Weight 8 lbs.

Red Devil PLIERS

"BUHL" RADIO SELECTION

This selection comprises an assortment of "Red Devil" pliers particularly adapted for Radio work, an ideal selection of small pliers which includes the popular "Buhl" Easel Back Display Board, beautifully finished in oak.



No. 15.

The following tools comprise this popular selection

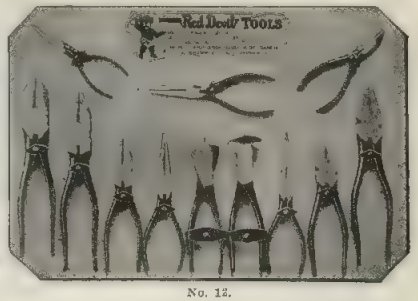
3800—6	in. Each,	$1.00	777—6	in. Each,	$1.35
50—6	in. Each,	1.25	622—5	in. Each,	1.10
50—8	in. Each,	1.60	72—6	in. Each,	1.20
265—4½	in. Each,	1.00	500—5	in. Each,	1.10
942—5	in. Each,	1.25	50—5	in. Each,	1.10
942—6	in. Each,	1.50	652—6	in. Each,	1.35
1038—6	in. Each,	1.10	1024—5¼	in. Each,	.90
654—6	in. Each,	1.30	Total Retail Value.		

No. 15—Buhl Radio Selection.....Each, $18.10

Note.—These Pliers are listed separately on pages 337-346.

"BUHL" HARDWARE SELECTION

This selection comprises 12 popular "Red Devil" pliers for various kinds of work, attractively mounted on a beautiful quartered oak display board. Keeps the tools on display, increases sales for the dealer. Works 7 days and 7 nights each week.



No. 12.

The following tools comprise this selection.

1950—8	in. Each,	$2.25	1033—6	in. Each,	$1.10
1050—6	in. Each,	1.00	72—6	in. Each,	1.20
1050—8	in. Each,	1.25	777—6	in. Each,	1.35
1000—8	in. Each,	1.00	942—5	in. Each,	1.25
1000—6	in. Each,	.85	622—5	in. Each,	1.10
654—6	in. Each,	1.30	542—6½	in. Each,	1.50

Total Retail Value.....

No. 12—Buhl Hardware Selection.....Each, $15.15

Note.—These Pliers are listed separately on pages 337-346.

DIAMOND SPECIAL SIDE CUTTING PLIERS

No 201

"Klein" Diamond Special Side Cutting Plier. Made from special bar steel, forged, machined and carefully tempered.

Inches	6	7	8	9
No. 201—Black Finish, Polished Head.....Per Dozen,	$33.60	40 20	45.00	53.40

Packed—Each in a Separate Box, Half Dozen in a Carton.

No 212

"Klein" Diamond Special Side Cutting Plier, with **Sleeve Twister.** Made from special bar steel, carefully tempered.

Inches	7	8
No. 212—Black Finish, Polished Head.....Per Dozen,	$45.00	53.40

Packed—Each in a Separate Box, Half Dozen in a Carton

Wm. Rogers & Son

"THE BEST AT THE PRICE"

"Reinforced Plate," or an Extra Deposit of Silver, where the Most Wear Comes

LA FRANCE

Gray or Bright Finish

Heavy Plate

Dessert Forks
12 in unlined box, $7.50 dozen
Medium Forks
12 in unlined box, $7.92 dozen

Tea Spoons
12 in unlined box
$3.96 dozen

Dessert Spoons
12 in unlined box $7.50 dozen
Table Spoons
12 in unlined box, $7.92 dozen

Triple Plate

Medium Knives or Forks, Hollow Handle ..... $23.40 doz.
No. 50 Medium Knives, Hollow Handle, Stainless Steel Blade ..... 27.36 "
Dessert Knives or Forks, Hollow Handle ..... 22.56 "
No. 51 Dessert Knives, Hollow Handle, Stainless Steel Blade ..... 26.64 "
Breakfast Knives, Hollow Handle ..... 23.10 "
Packed in lined box

Medium Knives or Forks, Solid Handle ..... $31.28 doz.
No. 42 Medium Knives, Solid Handle, Stainless Steel French Blade ..... 37.56 "
No. 72 Medium Knives, Solid Handle, Stainless Steel Cimeter Blade ..... 36.84 "
Dessert Knives, Solid Handle ..... 36.84 "
Breakfast Knives, Solid Handle, Cimeter and Swaged ..... 9.68 "
Packed in unlined box

Illustrations actual size. Dessert Knives shown

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

LA FRANCE

Gray or Bright Finish

Fruit Knife
Solid Steel, Triple Plated, set of six, $3.76
Solid Steel, Triple Plated, Plain set of six, $3.64

Ice Tea Spoon
Packed 12 in unlined box, per doz., $7.28
Extra Plate

Butter Knife
Packed 12 in unlined box, per doz., $7.92
Packed 1 in lined box, " " 9.58
Extra Plate

Butter Spreader
Extra Plate, set of six, $4.64

Sugar Shell
Packed 12 in unlined box, per doz., $7.50
Packed 1 in lined box, " " 9.16
Extra Plate
No. 133 Set, Butter Knife and Sugar Shell in lined box, per set, $1.80

Orange Spoon
Extra Plate, set of six, $3.34

Soup Spoon
Packed 6 in lined box, set of six $4.28
Packed 12 in unlined box, per doz., $7.92
Extra Plate

Individual Salad Fork
Extra Plate, set of six, $5.20

Cold Meat Fork, Large
Extra Plate each, $1.38

Ladles

	Extra Plate, each,
Cream,	$1.24
Gravy,	1.66
Oyster,	2.58
Medium,	4.40

Bouillon Spoon
Extra Plate, set of six, $4.24

Tomato Server
Extra Plate, each, $2.20

Sugar Tongs
Extra Plate, each, $1.66

Berry Spoon
Extra Plate each, $2.20

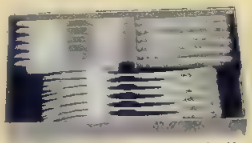
Pie Server, Hollow Handle
Each, $4.56

Pickle Fork, Long
Extra Plate, each, $1.24

Oyster Fork
Extra Plate, set of six, $3.44

One-half size

Illustrations of sets, about one-fourth actual size



No. 500 Set, in blue lined gift box, $8.74
6 Solid Handle Medium Knives and 6 Flat Handle Medium Forks
No. 504 Dessert Knives and Forks, $8.44
No. 500/4 with No. 42 Stainless Steel Knives, $12.60
No. 500/7 with No. 72 Stainless Steel Knives, 13.28

No. 10 Child's Set, in blue lined gift box, $3.50
Child's Hollow Handle Knife, Flat Fork and Spoon

All Fancy Pieces in Blue Lined Gift Boxes

No. 702 Set, in blue lined gift box, $15.92
6 Hollow Handle Medium Knives and 6 Flat Forks
No. 703 Dessert Knives and Forks, $15.30

INTERNATIONAL SILVER CO.

ROGERS

HEAVY WEIGHT SECTIONAL PLATE

LA TOURAINE

Gray Finish

Oyster Fork
Extra Plate, set of six, $1.38

Coffee Spoon
Extra Plate, set of six, $3.24

Pickle Fork, Long Handle
Packed 12 in unlined box
Extra Plate, per doz., $16.64
Packed 1 in blue lined gift case, each, $1.76

Butter Spreader
Extra Plate, set of six, $5.88

Butter Knife
Packed 12 in unlined box, per doz., $14.40
Packed 1 in blue lined gift case per doz., $16.64
Extra Plate

Bouillon Spoon
Extra Plate, set of six, $6.24

Soup Spoon
Extra Plate, set of six, $6.88
Packed 12 in unlined box, per doz., $13.13

Sugar Shell
Packed 12 in unlined box, per doz., $12.48
Packed 1 in blue lined gift case, per doz., $14.56
Extra Plate

Individual Salad Fork
Extra Plate, set of six, $6.56

Solid Handle Fruit Knife
Solid Steel, Triple Plated, set of six, $3.96

Tomato Server
Extra Plate each $2.78

Ladles

	Extra Plate, each,
Cream	$1.56
Gravy	2.08
Oyster	4.50
Soup, Medium	5.56

Orange Spoon
Extra Plate, set of six, $4.16

Cold Meat Fork, Large
Extra Plate, each, $1.74

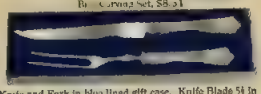
Berry Spoon
Extra Plate each $2.78

All Fancy Pieces in Blue Lined Gift Boxes

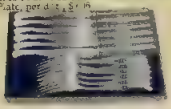
Ice Tea Spoon
Packed 12 in unlined box
Extra Plate, per doz., $4.16

About one-third size

No. 1 Child's Set, $2.78
Flat Handle Knife, Fork and Spoon
In blue lined gift case



Knife and Fork in blue lined gift case. Knife Blade 5¼ in
Heavily Plated Hollow Handle and Finest Steel Blade
No. 85 Above set with Stainless Steel Blade, $2.78



No. 802 Set, in blue lined gift case, $18.94
6 Hollow Handle Med. Knives and 6 Flat Forks

No. 500 Set, in blue lined gift case, $11.56
6 Solid Handle Med. Knives and 6 Flat Forks

Illustrations of sets and chests, about one-seventh actual size

No. 885 Case, 26 pieces $37.76
Blue [illegible] Gray Finish, Hollow Handle Knife, Fork and Spoon, 6 Tea Spoons, 6 Bouillon Spoons, 6 Medium Forks, 6 Flat Handle Medium Knives, Butter Knife, Sugar Shell.

No. 87 Chest, 31 pieces $44.72
Mahogany finish Chest, with handles [illegible] Gray Finish, Hollow Handle Knife, Fork and Spoon, 6 Tea Spoons, 6 Bouillon Spoons, 6 Medium Forks, 6 Flat Handle Medium Knives, Butter Knife, Sugar Shell, Individual Salad Fork, Berry Spoon, Pie Knife, Cold Meat Fork, Gravy Ladle, Cream Ladle, Tomato Server, Orange Spoon, All Metal Bread Knife.

No. 89 Chest, 76 pieces $110.00
Solid Mahogany finish Chest, with Lock and Key, Lined with Velvet and Silk Plush, Gray Finish, Hollow Handle Knife, Fork and Spoon, 12 Tea Spoons, 12 Bouillon Spoons, 12 Medium Forks, 12 Flat Handle Medium Knives, 6 Individual Salad Forks, 6 Berry Spoons, 6 Pie Knives, 6 Cold Meat Forks, Gravy Ladle, Cream Ladle, Tomato Server, Orange Spoon, All Metal Bread Knife, Butter Knife, Sugar Shell, Pickle Fork, Long Handle, Butter Spreader, Soup Spoon, Oyster Fork, Coffee Spoon.

No. 893 Case, 50 pieces $74.25
Set in Mahogany finish Case, Lined with Velvet and Silk Plush, Gray Finish, Hollow Handle Knife, Fork and Spoon, 12 Tea Spoons, 12 Bouillon Spoons, 12 Medium Forks, 12 Flat Handle Medium Knives, 6 Individual Salad Forks, 6 Berry Spoons, 6 Pie Knives, 6 Cold Meat Forks, Gravy Ladle, Cream Ladle, Tomato Server, Orange Spoon, Sugar Shell, Butter Knife, 6 Tea Spoons.

ROGERS

HEAVY WEIGHT SECTIONAL PLATE

LA TOURAINE

Gray Finish

Dessert Forks
6 in lined box $1.[illegible] doz.
Medium Forks
6 in lined box $[illegible].[illegible] dozen

Tea Spoons
6 in lined box
$6.[illegible] dozen

[illegible] Dessert and Table Spoons of Solid and Dessert Knives, with a heavy sectioned [illegible] plate [illegible] pieces to wear

Dessert Spoons
6 in lined box, $[illegible] dozen
Table Spoons
6 in lined box, $[illegible] dozen

Heavy Plate

Triple Plate

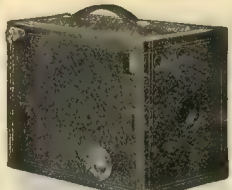
[illegible] Forks, Hollow Handle [illegible] doz.
No. [illegible] Medium Knives, Hollow Handle, Stainless Steel [illegible] 59.60 "
Dessert Knives, Hollow Handle [illegible] 27.48 "
No. [illegible] Medium Knives, Stainless Steel [illegible] 27.98 "
[illegible] Spoons, Solid Handle [illegible] 16.94 "
[illegible] in lined box [illegible] "

Medium Knives, Solid Handle ..... $9.88 doz.
No. 83 Medium Knives, Solid Handle, Stainless Steel French Blade ..... 17.48 "
No. 83 Medium Knives, Solid Handle, Stainless Steel Cimeter Blade ..... 16.96 "
Dessert Knives, Solid Handle ..... 9.63 "
Packed [illegible]

Illustrations actual size. Dessert Knives shown

INTERNATIONAL SILVER CO.

SENECA CAMERAS



Seneca Box Scout

The Seneca Box Scout is a popular model especially practical for the younger folks because of its simplicity of operation.

Seasoned wood and metal covered with leatherette protect it against the rough usage it is sure to get.

Good pictures can be taken from the start because there is nothing to learn about it. The Achromatic Lens is always in focus and the Camera is always ready to "shoot."

There is a big appeal in this handy, practicable camera. Offer it as a premium and it will start things moving for you.

No. 99J15. No. 2 Box Scout Camera. Size of pictures 2¼x3¼ inches. Each 1.88

No. 99J16. No. 2A. Box Scout Camera. Pictures 2½x4¼ in Each 2.65

No. 2 Seneca Folding Scout

For Premium use. Here's the biggest dollar for dollar value you can buy.

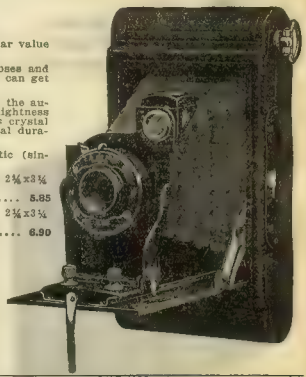
This camera was made especially for premium purposes and you'll find it a better camera at a better price than you can get anywhere on the market today.

Among its exclusive features are its ease of loading, the automatic five-speed shutter, collapsible reversible finder, lightness of weight due to body being made of aluminum and its crystal enamel finish. The camera as a whole embodies unusual durability and picture-taking qualities.

A choice is given of either the Meniscus Achromatic (single) or Rapid Rectilinear (double) lens equipment.

No. 99J20. No. 2 Folding Scout Camera. Pictures 2¼x3¼ inches, with Achromatic lens. Each 5.85

No. 99J21. No. 2 Folding Scout Camera. Pictures 2¼x3¼ inches, with rectilinear lens. Each 6.90



Folding Scout Camera

These nationally known models have enjoyed an enviable reputation for many years.

The splendid value of the Folding Scout Models is unequalled at their price.

These cameras are unusually simple to operate and take excellent pictures. The bodies of these cameras are made of aluminum with reinforced wood sides, thus securing strength without weight.

All practical features are embodied in these models and they are well suited for either the beginner or the photographer.

The Folding Scouts are furnished in either the Meniscus Achromatic (single) or the Rapid Rectilinear (double) lens equipment. We feature the two most popular sizes, the No. 2A for pictures 2½x4¼ and the No. 3A for pictures 3¼x5½ (postcard size).

No. 99J17. Seneca Folding Scout No. 2A Camera. Pictures 2½x4¼ inches. Each 9.50

No. 99J16. Seneca Folding Scout No. 3A Camera. Pictures 3¼x5½ inches. Each 12.80

No. 99J19. Folding Scout Rapid Rectilinear Lens No. 2A Camera. Pictures 2½x4¼ inches. Each 13.00

Seneca Cameras

A Well-Known and Popular Camera

Vest Pocket Camera

The Vest Pocket Seneca is a practical little Camera combining simplicity, compactness and real picture-taking ability. It takes pictures measuring 1⅝x2½ inches.

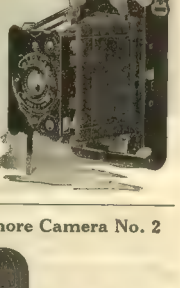
Open the protecting door, pull out the front which automatically locks in the correct position and the Camera is ready for work. No focusing or estimating distances is necessary; every object six feet or more from the lens will be sharp and clear in the picture.

A feature of the Vest Pocket is its ease of loading. The back can be removed and film inserted handily.

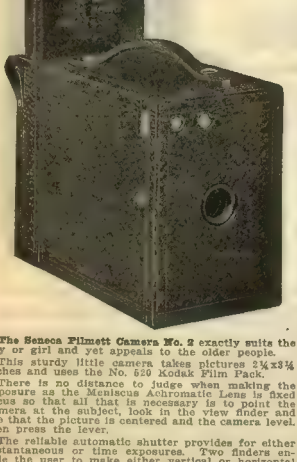
T f:7.5 and f:6.3 Anastigmat lenses produce excellent negatives even on gray days when the light is poor. Pictures made with these lenses can be enlarged without losing sharpness or detail.

The Vest Pocket is staunchly made of aluminum. The body is covered with black grain leather; the bellows is black and metal parts are highly nickeled giving the Camera a trim, attractive appearance.

No. 99737. With Rapid Rectilinear Lens, Deltax or Marvel Shutter.
Each 6.75



Seneca Filmett Camera No. 2



The Seneca Filmett Camera No. 2 exactly suits the boy or girl and yet appeals to the older people.

This sturdy little camera takes pictures 2¼x3¼ inches and uses the No. 620 Kodak Film Pack.

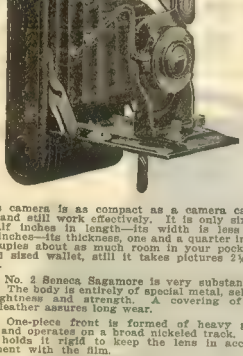
There is no distance to judge when making the exposure as the Meniscus Achromatic Lens is fixed focus so that all that is necessary is to point the camera at the subject, look in the view finder and see that the picture is centered and the camera level, then press the lever.

The reliable automatic shutter provides for either instantaneous or time exposures. Two finders enable the user to make either vertical or horizontal pictures. Leatheret furnishes a waterproof as well as durable cover.

All metal parts on the exterior part of the Camera are made of brass nickel plated. This camera can be loaded and unloaded in daylight. It is packed in a carton with full instructions for use.

No. 99736. Each 1.05

Seneca Sagamore Camera No. 2



This camera is as compact as a camera can be made and still work effectively. It is only six and one-half inches in length—its width is less than three inches—its thickness, one and a quarter inches. It occupies about as much room in your pocket as a good sized wallet, still it takes pictures 2¼x3¼ inches.

The No. 2 Seneca Sagamore is very substantially made. The body is entirely of special metal, selected for lightness and strength. A covering of seal grain leather assures long wear.

The One-piece front is formed of heavy gauge metal and operates on a broad nickeled track. This track holds it rigid to keep the lens in accurate alignment with the film.

Either the Seneca Deltax or Marvel Shutter is standard equipment with the Single Achromatic and Rapid Rectilinear Lenses. Both have fractional exposures 1/25, 1/50 and 1/100 second, besides the usual Time and Bulb exposures.

No. 99734. With Rapid Rectilinear Lens, Deltax or Marvel Shutter. Each 10.00

No. 99735. With f:7.5 Anastigmat Lens, Gammax or Marvel Shutter. Each 14.50

Selling the fun *of* using good tools

A good humored advertising campaign starts this month in a representative group of national magazines

'When Mother Issues Specifications for a Job"

This illustration is a reproduction of a painting in oils used in SIMONDS advertising appearing during April in *Collier's, The Saturday Evening Post & The Literary Digest.*

SIMONDS

PRONOUNCED SY-MONDS

SAWS FILES KNIVES STEEL

Selling the fun of using good tools

AN Advertising Campaign with a KICK in it. Not a back kick. A straight ahead right-from-the-shoulder front kick. An advertising campaign that ignores the accepted straight-laced paths of tool advertising and sells the prospect on the FUN of using good tools. THAT is the basis of the new Simonds advertising campaign.

Simonds advertising for Nineteen Twenty-four means good business for the hardware dealer. It means that Simonds is setting out to capitalize the love for a thoroughbred tool that every honest-to-goodness he-man has somewhere in his system.

Watch for Simonds advertising. Better still—send for the Simonds 1924 advertising portfolio and the Simonds special dealer proposition that will place you in a strategic position for making the new Simonds campaign work for YOU!

Simonds advertising will appear regularly during Nineteen Twenty-four in Collier's, The Saturday Evening Post, The Literary Digest and Popular Science Monthly.

If you haven't received a Copy of the Simonds Nineteen Twenty-four Portfolio, write for it today!

SIMONDS SAW & STEEL CO.
"The Saw Makers" *Established 1832*
FITCHBURG, MASS
Branch Offices in Principal Cities

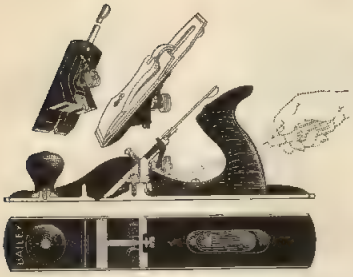
SIMONDS

Pronounced SI-MONDS

SAWS FILES KNIVES STEEL

ADJUSTABLE IRON PLANES

BAILEY'S BENCH



Bench Planes are divided into four classes, namely, **Smooth, Jack, Fore and Jointer.**

A **Smooth Plane** is for finishing or smoothing off flat surfaces. Where the uneven spots are of slight area, its short length will permit it to locate these irregularities, leaving the work with a smooth surface when finished.

A **Jack Plane** is used to true up the edges of a board in the rough and prepare it for the Fore or Jointer.

A **Fore Plane** is simply a short Jointer, and being lighter, is preferred by some workmen to the longer plane.

A **Jointer** is a finishing plane for large surfaces and is invariably used to true up the edges of boards so that they can be closely fitted or joined together.

In the illustration the detail of construction is very clearly shown. Note that the frog has a support directly at the rear of the mouth, making practically one solid piece from the cap to the bottom. The sides and bottom of the plane are stiffened by means of the cross ribs. The screw bosses on each side of the center rib are very deep, allowing a number of threads to engage, thereby securely holding the frog. The design prevents the plane being drawn out of true when the face of the frog is screwed up hard.

The width of the mouth may be regulated and made wider or narrower as coarse or fine work may require. First remove the lever and cutter and loosen the two frog screws that fasten the frog to its seat. With a screw driver turn the center adjusting screw (see cut) to the right to close the mouth, and to the left to open it. When the frog is in the position desired, tighten the frog screws and replace the cutter and lever.

The cutter is adjustable endwise by means of the adjusting wheel at the back of the frog It is also adjustable sidewise by lever located near the top and at the back of the cutter.

It is made of the finest quality English steel, tempered and ground by an improved process, and honed ready for use

The handle and knob are made of highly finished, thoroughly seasoned rosewood.

All genuine "Bailey" Planes have the name "Bailey" cast in the bottom, and the name Stanley is stamped on the cutter.

SMOOTH BOTTOM

SMOOTH

Each

No. 3—8 in. long, 1¾ in. cutter, weight each 3⅛ lbs..$4.00

No. 4—9 in. long, 2 in. cutter weight each 3½ lbs.... ... 4.40

One in a box.

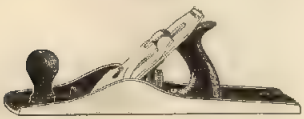
JACK

Each

No. 5—14 in. long, 2 in. cutter, wt. each 4½ lbs.....$5.00

One in a box.

FORE



Each

No. 6—18 in. long, 2⅜ in. cutter, weight each 6¼ lbs..$6.50

One in a box.

JOINTER

Each

No. 7—22 in. long, 2⅜ in. cutter, weight each 8 lbs....$7.40

One in a box.

CORRUGATED BOTTOM

SMOOTH

Each

No. 3C—8 in long, 1¾ in. cutter, weight each 3⅛ lbs.....$4.20

No. 4C—9 in. long, 2 in. cutter, weight each 3½ lbs..... 4.60

One in a box.

JACK

Each

No. 5C—14 in. long, 2 in. cutter, wt. each 4½ lbs.....$5.30

One in a box.

FORE

Each

No. 6C—18 in. long, 2⅜ in. cutter, weight each 6¼ lbs..$6.80

One in a box.

JOINTER

Each

No. 7C—22 in. long, 2⅜ in. cutter, weight each 8 lbs...$7.80

One in a box.

IRON BLOCK PLANES

STANLEY

Japanned cast iron frame and cap, tempered and polished tool steel cutter.

For light work. The cutter is adjustable endwise. Bottom is ground true and the sides neatly japanned.

Each

No. 103—5½ in. long, 1⅝ in. cutter, lever adjustment, weight each ⅞ lbs. $1.20

One in a box.

Japanned cast iron frame and cap, tempered and polished tool steel cutter

Both the bottom and the sides are ground and in place of the boss on the front for a finger rest, it has a rosewood knob. Each

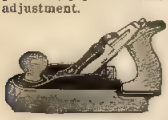
No. 110—7 in. long, 1⅝ in. cutter, weight each 1⅝ lbs..$1.20

One in a box.

WOOD BOTTOM PLANES

"BAILEY" ADJUSTABLE

"Bailey" wood planes supply the demand for a wood plane of superior quality. The bottom, handle and knob are made from selected and well seasoned beech wood. The cutters are the regular "Bailey" type, tempered tool steel, ground and polished, japanned cast iron frame and cap, screw and lever adjustment.



HANDLED SMOOTH

Each

No. 35—9 in. long, 2 in. cutter, weight each 3¼ lbs.....$4 20

One in a box.

JACK

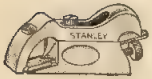
Each

No. 26—15 inches long, 2 in. cutter, weight each 3¾ lbs. $3.70

One in a paper package.

CABINET MAKERS' RABBET PLANES

STANLEY



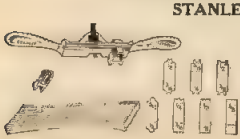
These planes will lie perfectly flat on either side, and can be worked either right or left hand. Have adjustable throats and "Handy" grip. The cutters are adjustable endwise By removing the front a chisel plane is obtained. Each

No. 90—4 in. long, 1 in. cutter, nickel plated, weight each 1 lb. $4.00

One in a box.

HAND BEADERS

STANLEY



For beading, reeding or fluting straight or irregular surfaces, also for light routering. Fitted with two gauges, one for straight and other for curved work.

Each

No. 66—11½ in. long, nickel plated, with 8 cutters, nickel plated $1.80

One in a box.

BELT MAKERS' PLANES

STANLEY

For chamfering down the ends or laps of a belt before fastening them together

Japanned iron frame, adjustable throat, cutter is adjustable endwise, hardwood handle.

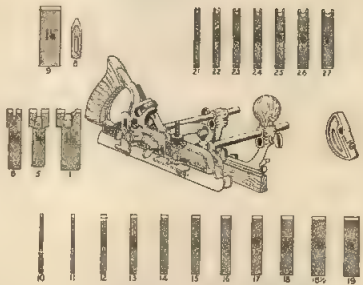
Each

No. 11—5¾ in. long, 2⅝ in. cutter, weight each 3½ lbs..$4.30

One in a box.

FANCY PLANES

STANLEY'S



Plow, Beading, Rabbet and Matching

Seven tools in one compact and practical form, (1) beading and center beading plane, (2) plow, (3) dado, (4) rabbet and filletster, (5) match plane, (6) sash plane, (7) slitting plane.

The plane is fitted with spurs for use across the grain and can be used either right or left hand.

Nickel plated frame, selected rosewood handle, knob and fence.

Each

No. 45—10 in. long, complete with 23 cutters as listed below, adjustable fence, depth gauge and spurs, put up in a neat steel box, weight per set 9½ lbs.....$15.00

Cutters Regularly Supplied With Plane

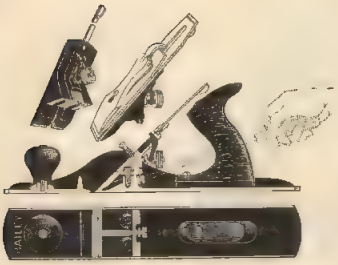
The prices are given in case duplicates should be required.

No.			Each
1	1½	in. Sash tool	$1.00
5	¼	in. Match tool	1.00
6	7/16	in. " "	1.00
8		Slitting tool	.60
9	1¼	in. Filletster	.50
10	⅛	in. Plow & Dado tool	.30
11	3/16	in. " "	.30
12	¼	in. " "	.30
13	5/16	in. " "	.30
14	⅜	in. " "	.40
15	7/16	in. " "	.40
16	½	in. " "	.40
17	9/16	in. " "	.40
18	⅝	in. " "	.40
18½	11/16	in. " "	.50
19	¾	in. " "	.50
21	⅛	in. Beading tool	.30
22	7/16	in. " "	.30
23	¼	in. " "	.30
24	5/16	in. " "	.40
25	⅜	in. " "	.40
26	7/16	in. " "	.50
27	½	in. " "	.50

One in a box.

ADJUSTABLE IRON PLANES

BAILEY'S BENCH



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A Jack Plane is used to true up the edges of a board in the rough and prepare it for the Fore or Jointer.

A Fore Plane is simply a short Jointer, and being lighter, is preferred by some workmen to the longer plane.

A Jointer is a finishing plane for large surfaces and is invariably used to true up the edges of boards so that they can be closely fitted or joined together

In the Illustration the detail of construction is very clearly shown Note that the frog has a support directly at the rear of the mouth, making practically one solid piece from the cap to the bottom. The sides and bottom of the plane are stiffened by means of the cross ribs The screw bosses on each side of the center rib are very deep, allowing a number of threads to engage, thereby securely holding the frog The design prevents the plane being drawn out of true when the face of the frog is screwed up hard.

The width of the mouth may be regulated and made wider or narrower as coarse or fine work may require. First remove the lever and cutter and loosen the two frog screws that fasten the frog to its seat. With a screw driver turn the center adjusting screw (see cut) to the right to close the mouth, and to the left to open it. When the frog is in the position desired, tighten the frog screws and replace the cutter and lever.

The cutter is adjustable endwise by means of the adjusting wheel at the back of the frog. It is also adjustable sidewise by lever located near the top and at the back of the cutter.

It is made of the finest quality English steel, tempered and ground by an improved process, and honed ready for use

The handle and knob are made of highly finished, thoroughly seasoned rosewood.

All genuine "Bailey" Planes have the name "Bailey" cast in the bottom, and the name Stanley is stamped on the cutter.

SMOOTH BOTTOM

SMOOTH

Each

No. 3—8 in. long, 1¾ in. cutter, weight each 7⅛ lbs $4.00

No. 4—9 in. long, 2 in cutter weight each 8½ lbs... ... 4.40

One in a box.

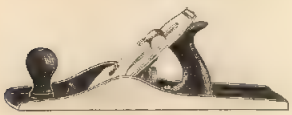
JACK

Each

No. 5—14 in. long, 2 in. cutter, wt. each 4½ lbs.....$5.00

One in a box.

FORE



Each

No. 6—18 in. long, 2⅜ in. cutter, weight each 6¼ lbs..$6.50

One in a box.

JOINTER

Each

No. 7 22 in. long, 2⅜ in. cutter, weight each 8 lbs....$. 4)

One in a box.

CORRUGATED BOTTOM

SMOOTH

Each

No. 3C—8 in. long, 1¾ in. cutter, weight each 3⅛ lbs..... $4.20

No. 4C 9 in long, 2 in cutter. weight each 3½ lbs..... 4.60

One in a box.

JACK

Each

No. 5C—14 in. long, 2 in. cutter, wt. each 4½ lbs.....$5.30

One in a box.

FORE

Each

No. 6C—18 in long, 2⅜ in. cutter, weight each 6¼ lbs..$6.80

One in a box.

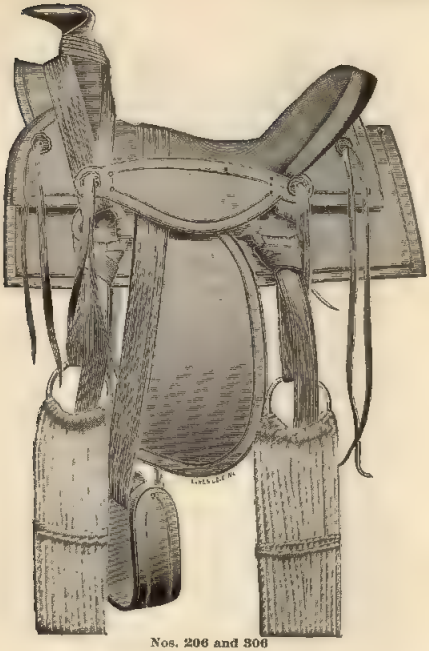
JOINTER

Each

No. 7C 22 in. long, 2⅜ in. cutter, weight each 8 lbs...$7.80

One in a box.

TEXAS RIDING SADDLES



Nos. 206 and 306

LATEST DESIGNS

Best quality leather.

	Each
No. 206—14 in. tree, steel fork, 7½x14 in. fenders; 11x20 in. skirt; 1½ in. stirrup leathers, 1 in. tie straps, 4 in. Texas sawed stirrups	$16.50
No. 306—14½ in. tree, steel fork, 7½x14 in. fenders; 11x21 in. skirt; 1½ in. stirrup leathers; 1 in. tie straps, 4 in. Texas sawed stirrups	20.50

Nos. 229 and 374

LATEST DESIGNS

Best quality leather.

	Each
No. 229—15 in. tree, steel fork, 10 in. bulge, 12x23 in. skirts, 8x14 in. fenders, 2 in. stirrup leathers, 1⅛ in. tie straps, 4 in. Texas sawed stirrups	$30.00
No. 374—Same as No. 229, except with 14 in. tree	29.00

RIDING SADDLES

TEXAS

Latest Design

Each

No. 474—Hand stamped, 14⅛ in. tree with 11½ in. bulge, steel forks, seat straight full up canter, front full laced on side, 16x19 in. fender, 12x23 in skirts felt lined, round corners, 2 in. stirrup leathers, fenders laced on, 1¼ in. Latigo straps, 2 in. ox bow stirrups, 15 strand girths $34.50

BUENA VISTA

Highest Quality

Each

No. 145—17 in. tree, 23 in. skirts, 14x9½ in. fenders, 1½ in. girth straps, 1½ in. stirrup leathers, wool lined pad, stirrups Buena Vista block or 4 in. Texas sawed $27 00

No. 240—17 in. tree, 22 in. skirts, 14x9½ in fenders, 1½ in. girth straps, 1½ in. stirrup leathers, wool lined pad, stirrups Buena Vista block or 4 in. Texas sawed 30.00

No. 245—17 in. tree, 23 in. skirts, 16x11½ in. fenders, 16 cord web girths, 1½ in. stirrup leathers, stirrups genuine Buena Vista block or 4 in. covered.. 33.75

SADDLE BLANKETS

OUR WINNER

Made of old gold drill of excellent quality, composite stuffing, space in center left open or unstuffed, a strip of red felt (not pinked) inserted in and extending around the outer edge gives pad a handsome and finished appearance.

Per dozen

No. 2W—26x32 in , weight per dozen 72 lbs. $12.00

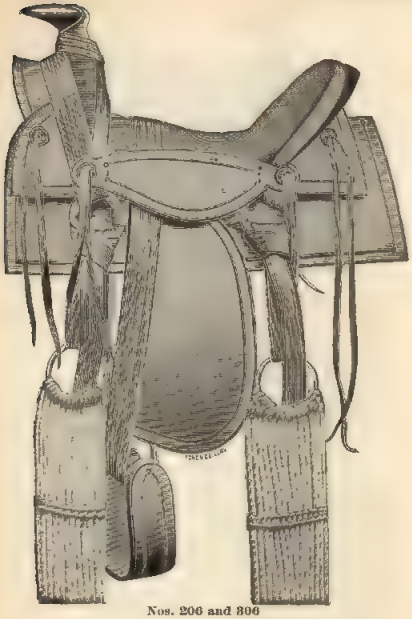
PERFORATED FELT

Grey, long staple wool carried through burlap by slender barbed needles, double interlining, duck facing, stitched edges, strong, porous and flexible, strictly high grade.

Per dozen

No. 822D—24x34 in., weight per dozen 60 lbs. $21.00

TEXAS RIDING SADDLES



Nos. 206 and 806

LATEST DESIGNS

Best quality leather.

Each

No. 206—14 in. tree, steel fork, 7½x14 in. fenders; 11x20 in. skirt; 1½ in. stirrup leathers, 1 in. tie straps, 4 in. Texas sawed stirrups $16.50

No. 806—14½ in. tree, steel fork, 7½x14 in. fenders; 11x21 in. skirt; 1½ in. stirrup leathers; 1 in. tie straps, 4 in. Texas sawed stirrups 20.50

Nos. 229 and 374

LATEST DESIGNS

Best quality leather.

Each

No. 229—15 in. tree, steel fork, 10 in bulge, 12x23 in. skirts, 8x14 in fenders, 2 in. stirrup leathers, 1½ in. tie straps, 4 in. Texas sawed stirrups $30.00

No. 374—Same as No. 229, except with 14 in. tree ... 29.00

RIDING SADDLES

TEXAS

Latest Design

Each

No. 474—Hand stamped, 14½ in tree with 11½ in. bulge, steel forks, seat straight full up canter, front full laced on side, 16x19 in. fender, 12x23 in skirts felt lined, round corners, 2 in. stirrup leathers, fenders laced on, 1¼ in. Latigo straps, 2 in. ox bow stirrups, 15 strand girths $34.50

BUENA VISTA

Highest Quality

Each

No. 145—17 in. tree, 23 in skirts, 14x9½ in. fenders, 1½ in. girth straps, 1½ in stirrup leathers, wool lined pad, stirrups Buena Vista block or 4 in Texas sawed $27.00

No. 240—17 in. tree, 22 in skirts, 14x9½ in fenders, 1½ in. girth straps, 1½ in. stirrup leathers, wool lined pad, stirrups Buena Vista block or 4 in. Texas sawed 30.00

No. 245—17 in. tree, 23 in. skirts, 16x11½ in fenders 16 cord web girths, 1½ in. stirrup leathers, stirrups genuine Buena Vista block or 4 in. covered. 33.75

SADDLE BLANKETS

OUR WINNER

Made of old gold drill of excellent quality, composite stuffing, space in center left open or unstuffed, a strip of red felt (not pinked) inserted in and extending around the outer edge gives pad a handsome and finished appearance.

Per dozen

No. 2W—26x32 in., weight per dozen 72 lbs. $12.00

PERFORATED FELT

Grey, long staple wool carried through burlap by slender barbed needles, double interlining, duck facing, stitched edges, strong, porous and flexible, strictly high grade.

Per dozen

No. 322D—24x34 in., weight per dozen 60 lbs. $21.00

No. 72RC. No. 74RC. No. 62A-Tass. No. 72AGC. No. 322AWG. No. 432AG No. 542AG.

RUBBER SELF-FILLING PENS

No. 72RC—Equipped with nickel self-filling lever and roller clip. Each $2.75

No. 73RC—Same as No. 72RC, slightly larger and with No. 3 gold nib Each 3 75

No. 74RC—Slightly larger than No 73RC, with No. 4 gold nib. Each 4.25

No. 75RC—Same equipment as No. 72RC, with No. 5 gold nib. Each 5.25

No. 76RC—Nickel self-filling lever and roller clip, with No. 6 gold nib Each 6.25

No. 62W—Gold filled self-filling lever and ring in cap for fastening to chain or ribbon, No 2 gold nib. Each 2.75

No. 63W Same as No 62W, but slightly larger, No. 3 gold nib. Each 3.75

RUBBER SELF-FILLING PENS

No. 62A-Tass—Gold filled self-filling lever, clip and ring, No. 2 gold nib. Each $3.50

No. 72AGC—Fitted with gold filled self-filling lever, clip and band, No 2 gold nib Each 4.50

No. 74AGC—Fitted with gold filled self-filling lever, clip and band; No. 3 gold nib. Each 6.00

DART DESIGN

No. 322AWG—Green gold filled, with ring and No. 2 gold nib. Each $7.00

No 432AG—Green gold filled, with clip and No. 3 gold nib. Each 8.00

No. 542AG—Green gold filled, with clip and No. 4 gold nib. Each 9.00

522D

WAHL ALL-METAL PENS

The marvelous All Metal Pen matches Eversharp in design as well as in writing perfection. It has no inner walls of hard rubber—this space is used for extra ink capacity. It cannot leak and is always ready to write. Every man who already has an Eversharp is a logical buyer of the new All-Metal Wahl Pen to match. Many different sizes in the most popular designs and metals are shown here and listed in the descriptions.

Illustrations are actual size.

No. 321AW. No. 431A. No. 541A. No. 651A. No. 326AW. No. 436A. No. 656A.

CHASED DESIGN

No. 321DW—Silver filled, with ring and No. 2 gold nib. Each..$4.00
No. 321AW—Yellow gold filled, with ring and No. 2 gold nib. Each 5.00
No. 431D—Silver filled, with clip and No. 3 gold nib. Each 5.00
No. 431A—Yellow gold filled, with clip and No. 3 gold nib. Each 6.00
No. 541D—Silver filled with clip and No. 4 gold nib. Each 6.00
No. 541A—Yellow gold filled, with clip and No. 4 gold nib. Each 7.00
No. 651D—Silver filled, with clip and No. 5 gold nib. Each.. 7.00
No. 651A—Yellow gold filled, with clip and No. 5 gold nib. Each 7.00

GRECIAN BORDER DESIGN

No. 326AW Yellow gold filled, with ring and No. 2 gold nib. Each $6.00
No. 436A—Yellow gold filled, with clip and No. 3 gold nib. Each 7.00
No. 546A—Yellow gold filled, with clip and No. 4 gold nib. Each 8.00
No. 656A—Yellow gold filled, with clip and No. 5 gold nib. Each 9.00
No. 656AG—Green gold filled, with clip and No. 5 gold nib. Each 10.00

Wellsworth Goggle Assortments

Wellsworth Goggle Card Assortment

This assortment contains 12 pairs Zylonite goggles in round and drop eye, good quality with Riding Bow temples. Assorted colored lenses in Mi-Coquille, Amber, Smoke Fleuzal and Amethyst. Fine quality goggles at a very low price.

No. 201J37. Per assortment..... .... 4.50

Children's Goggle Assortment

This assortment contains: 12 pairs Zylonite Goggles with Riding Bow temples and assorted colored lenses in Amber, Smoke, Fleuzal and Amethyst. Small Round Eye 1⅛ inches, mounted on very attractive display cards.

No. 201J36. Per assortment..... 5.64

Wellsworth Goggle Card Assortment

EXTRA FINE QUALITY

Each card assortment contains twelve Zylonite Goggles of assorted styles in Round and Drop-Eye, Riding and Skull-Fit temples. Lenses furnished in Mi-Coquille, Amber, Smoke, Fleuzal and Amethyst.

No. 201J34. Assortment contains:
6 pairs 342R 1⅝ inch Riding Bow,
2 pairs 142S 1⅝ inch Skull-Fit,
1 pair 142R 1⅝ inch Riding Bow,
2 pairs 245R 1⅝ inch Drop-Eye,
1 pair 245S 1⅝ inch Skull-Fit.
Per assortment 5.20

No. 201J35. Assortment contains:
3 pairs 142R 1⅝ inch Riding Bow,
2 pairs 145S 1⅝ inch Skull-Fit,
2 pairs 345R 1⅝ inch Riding Bow,
2 pairs 145R 1⅝ inch Riding Bow
2 pairs 245R 1⅝ inch Riding Bow,
1 pair 345S 1⅝ inch Skull-Fit,
Per assortment 5.98

Wilson Goggles for Protection Against Sun, Dust, Wind and Glare

A Large Assortment of Various Styles to Meet Your Wants

No. 201J9. Nickel Plated Steel Spectacles, with large round amber lenses 2 inches in diameter, white metal riding bows. Per dozen..... 1.35

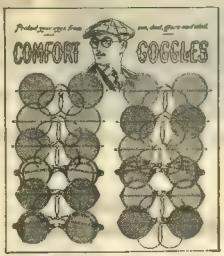
No. 201J10. Universal Goggles, with white metal frame and perforated metal side shields. Lenses 1⅞ inches in diameter. Each in a paper box. Per dozen..... 2.40

No. 201J11. Shell Goggles, with round lenses, 1⅝ inches in diameter. Each Goggle packed in waxine envelope. Per dozen..... 2.75

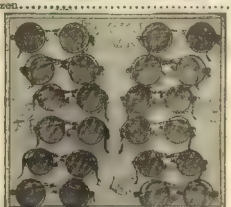
No. 201J13. Same as above, with larger size lenses, 1⅞ inches in diameter, and a better quality shell frame. Per dozen..... 3.00

Goggles with Case

No. 201J12. Universal Goggles, with white metal frame and perforated, metal side shields. Lenses 1⅞ inches in diameter. Each goggle packed in metal case. Per dozen..... 3.75



No. 201J14. Carded Assortment, holding twelve Goggles, assorted styles, selling for 50c. Three with white metal cable temples, and three shell style riding bows. Assorted colored lenses, amber, green and smoke. One dozen to an easel card. Per dozen..... 2.70



No. 201J39. Assortment of 12 Goggles, high grade display card, holding 12 assorted colored goggles shell colored frames. The best selling colors of amber, smoke and amethyst. Per assortment..... 3.15

No. 201J39. Assortment of 12 Goggles on high grade display card. The illustration forms the easel and is seen through the oval cutout, thus giving the appearance of depth. This beautiful display will create sales. Glass colors are the best selling shades of fleuzal, amber, smoke and amethyst. Per assortment..... 6.30

CECIL B. DeMILLE'S

PRODUCTION

"FEET OF CLAY"

WITH

ROD LA ROCQUE

VERA REYNOLDS

RICARDO CORTEZ

JULIA FAYE

THEODORE KOSLOFF

ROBERT EDESON

VICTOR VARCONI

A

PARAMOUNT

PICTURE

Adapted by Beulah Marie Dix and Bertram Millhauser from the Ladies Home Journal serial and novel by Margaretta Tuttle.

THE screen's greatest showman's greatest picture—that's "Feet of Clay". We've seen it. We know. So will you. See it at your exchange as soon as possible. An ultra-modern dramatic romance with gorgeous settings, bewitching girls, tremendous climaxes and a finish no audience will ever forget. A perfect box-office picture.

Cecil B. DeMille's "Feet Of Clay" is one of Paramount's Famous Forty

AC TITAN AND CARBON PROOF SPARK PLUGS

AC

Spark Plugs

The Standard Quality Plugs of the World

Over 319 Cars, Trucks, Tractors, Etc., Use AC Plugs as Standard Factory Equipment.

No. 7SRT.

⅞ Reg. Each, $1.00

No. 7SLT.

⅞ Long Each, $1.00

No. 7SLBT.

⅞ Long Body Each, $1.00

No. 7SDT.

⅞ Type D Each, $1.00

No. SAET.

SAE Reg. Each, $1.00

No. SAELT.

SAE Long Each, $1.00

No. SAENT.

SAE Extra Long Each, $1.00

No. 18MTCP.

Metric Carbon Proof Each, $1.00

Porcelains Gaskets Washers

Separate Porcelains with Bushings for AC Two-Piece Spark Plugs ..... Each, $0.35

Porcelain Gaskets..... Each, .03

Steel Washers..... Each, .03

Important.

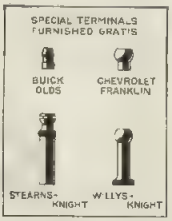
Order by number appearing over each plug.

No. 12CPT.

½ Reg. Carbon Proof Each, $1.00

No. 12LT.

½ Long Each, $1.00



Every AC Spark Plug Has Its Own Following of Customers.

No. 18SMT.

Short Metric Each, $1.00

No. 18ACA.

Metric Aircraft Type Each, $1.50

AC TWO-PIECE CARBON PROOF SPARK PLUGS

No. 12ACTP.

Each, $1.25

No. 12LACTP.

Each, $1.25

Equipment on many Trucks and Tractors. See Equipment List.

Ford Special

No. 1075—Each..... $0.75

For illustration and description in detail see page 728

NOTE.
Consult Chart on Following Page For Full List of Cars That Use The Various AC Plugs.

No. 7SACTP.

Each, $1.25

No. 7SLACTP.

Each, $1.25

Equipment on many Trucks and Tractors. See Equipment List.

SPARK PLUGS

FORD SPECIAL

AC Spark Plug Special—For Ford Cars

No. 1075.

The AC No. 1075 Special Spark Plug for Ford cars has a Spring terminal clip which permits wire to be instantly detached and re-connected while motor is running. Facilitates testing spark plug and coil. No nut to be unscrewed or lost.

By merely unscrewing the bushing, plug may be completely disassembled. Only one gasket is used. Extra large body porcelain to withstand hard service.

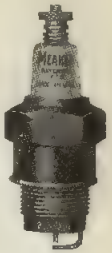
Patented **Carbon Proof** porcelain. Saw tooth edges attain sufficient heat to burn oil deposits thus offering effective resistance to carbon.

Large electrode will last indefinitely. Special shape forms natural drain preventing oil lodging in the spark gap.

No. 1075 Special—For Fords.....Each, $0.75

No. 1075 Porcelains and Gaskets.....Each, .35

MEAKER



Nos. 10 to 15.

Meaker Spark Plugs

The Meaker Plug has the good points of a one-piece plug, namely, a heavier porcelain which makes for strength and the sealed type construction which eliminates gas leakage. It also possesses the cleanable advantage of the two-piece plug, but without its attendant objections.

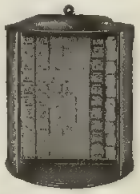
To clean the Meaker Plug, it is only necessary to unscrew the lower threaded nose piece, thus completely exposing that part of the porcelain which projects into the firing chamber, but this does not necessitate a disturbing of the porcelain or packing.

Nos.	10	11	12	13	14	15
Size	⅞-18x1 ⅛ Hex.	⅞-18x1 ⅛ Hex.	⅞-18x⅞ Hex.	⅞-18x⅞ Hex.	Metric Thread	½ inch
Description	Regular	Long	Regular	Long	.....	Regular
Each	$1.00	1.00	1.00	1.00	1.00	1.00

Chart and Stock

The AC Junior Quick Seller Free

This cabinet holds an assortment of 50 Plugs. A chart showing the correct spark plug size for every motor is mounted in the AC Junior Cabinet for ready reference. It gives the dealer accurate information. A glance will tell you the plug your customer needs. You are able to keep a perpetual inventory thus preventing loss of sales by telling you when it is time to reorder any type of plug. To secure one **free** a dealer must bring his AC's up to 50 plugs.



Stock Always Handy.

As Seen by Customer.

AC
Spark Plugs
The Standard Quality Plugs of the World

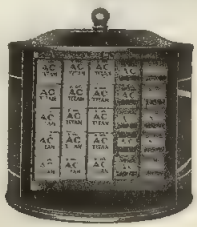


Chart and Stock.

The AC Quick Seller—Free

The Quick Seller is an attractive cabinet holding 140 AC Spark Plugs and is furnished **FREE** with an order for 140 AC Spark Plugs and is shipped **Direct** from Factory to Dealer.

It takes up very little counter space, yet it places every type and size of spark plug at your finger tips. It has a separate section for every kind of AC Plug and every plug is visible. Height 18 inches, Width 14¼ inches.

THE PROPER A C PLUG TO USE

PASSENGER CARS

Name of Car	No.
Abbott-Detroit	7SRT
*Ace	SAET
*Aleo	7SRT
Alsace	7SRT
American	7SLT
*Ambassador	7SRT
*Anderson	7SRT
*Apperson	7SRT
*Apperson 6&8	SAET
Auburn	7SRT
Austin	7SRT
*Bel-	7SLT
Belanger-Freres	18MT
Biddle	7SRT
*Birch	SAET
Bour-Davis	7SRT
Braddon	7SRT
Bradley	7SRT
Briscoe	7SRT
*Buick	7SLT
*Buick Model 35	7SRT
*Cadillac	7SRT
*Case	7SRT
*Chalmers	7SRT
Champion	7SRT
*Chandler to 1923	7SLBT
*Chandler 1923	7SRT
*Checker Cab	7SRT
Chevrolet	7SLT
*Cleveland Car	7SRT
Climber	7SRT
*Cole	7SRT
Columbia	7SRT
Comet	7SRT
Commonwealth	SAET
Crane-Simplex	7SLT
Crawford	7SRT
Crow Elkhart	7SRT
Cunningham	7SDT
*Daniels	7SRT
*Davis	7SRT
Dixie Flyer	7SRT
*Dodge Brothers	7SRT
Dorris	7SRT
*Dort	7SRT
*Dort Six	SAELT
Doughlas	7SRT
*Duesenberg	18MT
*Dupont	7SRT

Name of Car	No.
*Durant	SAELT
*Durant Six	SAET
*Earl	SAET
Economy	SAET
Elcar	7SRT
*Elgin	XLSAE
Empire	7SRT
*Essex	18MTCP
*Falcon	1LRT
*Fergus	18MT
*Fiat	7SRT
*Flint Six	7SRT
Ford	Ac1076
Franklin	SAELT
*Frontmobile	7SRT
Gardner	7SRT
Geronimo	7SRT
*Glide	7SRT
Grant	7SRT
*Gray Dort	7SRT
Hal	7SRT
H. C. S.	7SRT
Hamlin-Holmes	7SRT
*Hanson Six	7SDT
*Hawker	7SLT
Harroun	7SRT
*Hatfield	7SRT
*Haynes 55	7SXLBT
*Haynes 75	7SLT
*Haynes (to '21)	SAET
Hollier	7SRT
Holmes	7SRT
*Hudson (to 1921)	7SRT
*Hudson ('21)	18CPMT
*Humpmobile	7SRT
Inter-State	7SRT
Jackson	7SRT
Jeffery	7SRT
*Jewett	7SRT
Jones	7SRT
*Jordan	7SRT
King	7SRT
*Kissel-Kar	7SLT
Kline-Kar	7SRT
*LaFayette	7SRT
Lambert	7SRT
*Leach	7SRT
Lenox	7SRT
Lexington	SAET

Name of Car	No.
*Liberty	7SRT
Lincoln	7SRT
*Locomobile	SAELT
*London Six	SAET
*Lorraine	7SRT
*Matbohm	7SRT
Marion-Handley	7SRT
*Marmon	SAET
*Maxwell	7SRT
*McFarlan	SAENT
*McLaughlin	7SLT
*McLaughlin 6&8	SAELT
McLaughlin 35	7SRT
Mercer	7SRT
Meteor	7SRT
Metz	SAET
Metz (up to 1919)	12XLT
*Mitchell	SAET
Moon Knight	7SRT
Moreland	7SRT
*Monroe	SAET
Moon	7SRT
Moore	7SRT
*Nash	SAENT
*Nash 1918-19	SAELT
*National	7SRT
*Nelson	7SRT
*Noma	7SRT
Northway	SALT
*Oakland	SAELT
*Oakland (to 1918)	7SRT
*Ogren	SAELT
*Oldsmobile 8	7SRT
*Oldsmobile (4-6)	SAELT
Olympian	SAELT
Owen-Magnetic	7SRT
*Overland Four	1LRT
Packard	7SRT
*Paige	7SRT
*Pan	7SRT
*Pan American	7SRT
Parenti	7SRT
*Paterson	7SRT
Pathfinder	SAET
Peerless	7SRT
Phianna	7SRT
*Piedmont	7SRT
Pierce Arrow	7SRT
*Pilot	7SRT

Name of Car	No.
Pitcher	7SRT
*Premier	SAELT
Premocar	7SRT
Ranger	7SRT
Reo	12LT
*Revere	7SRATT
Rowmer	7SRAET
*Richelieu	7SRT
Rickenbacker	7SDT
*Rock Falls	SAET
Rolls-Royce	18MT
*R & V Knight	7SRT
*Sandow Taxicabs	7SRT
*Saxon	SALT
Sayers	7SRT
*Scripps Booth 4	7SLT
*Scripps-Booth 6	SAET
*Scripps-Booth 8	18SMT
*Seneca	7SRT
Severin	7SRT
*Sheridan	7SLT
*Singer	SAET
Skelton	7SRT
S. S. E.	7SRT
*Standard 8	SAET
*Stanwood	7SDT
*Star	7SRT
*Stearns-Knight	SAET
Sterling	SAET
Stephens	7SLT
Stevens-Duryea	7SLBT
Stewart	7SRT
Studebaker	SAET
" (up to 1920)	12CPT
Stutz	SAET
*Tarkington	SAET
*Templar	SAET
*Texan	7SRT
*Tulsa	7SRT
Velie	7SRT
*Vogue	7SRT
*Washington	SAET
*Wescott	7SRT
White	7SLBT
Wills-Sainte-Claire	18MT
*Willys-Knight	7SLBT
Winton	7SRT
Winther	7SRT
*Yellow Cab	7SRT

COMMERCIAL CARS

Acason	7SRT
Ace	7SRT
Acme	7SRT
*Ahrens Fox	7SLBT
*Ajax	7SRT
American LaFrance	7SRT
*Apex	7SRT
*Atco	7SRT
Atlas	7SRT
Autocar	7SRT
*Available	7SRT
*Avery	7SRT
Bell Hawkeye	7SRT
*Bell	7SRT
Bessemer	7SLBT
Bethlehem	7SRT
*Betz	7SRT
*Bolistrom	7SRT
*Bridgeport	7SRT
*Brinton	7SLBT
*Brockway	7SRT
*Buffalo	7SRT
Champion	7SRT
Chase	7SRT
*Chevrolet	7SLT
*Chicago	7SRT
*Clark Truck Tractor	7SRT
Clydesdale	7SRT
Collier	7SRT
Columbia	7SRT
Comet	7SRT
*Commerce	7SRT
Conestoga	7SRT
Corbitt	7SRT
*Dart	7SRT
Day-Elder	7SRT
*Dearborn	7SRT
*Defiance	7SRT
*Denby	7SRT
Dependable	7SRT
*DePue	7SRT
*Diamond "T"	7SRT
*Diehl	7SLBT
Dodge Bros	7SDT
Dorris	7SRT
Duplex	7SRT
Duty	SAELT
*Eagle	7SRT
Elmira	12CPT
Fageol	7SRT

Famous	7SRT
*Fargo	7SRT
*Federal	7SRT
Ford	AC1076
Forschler	7SRT
Frontmobile	7SRT
Fulton	7SRT
*F. W. D.	7SRT
Gabriel	7SRT
Garford	7SRT
*Garv	7SRT
Gersx	7SRT
*Gilbt	7SRT
*G & J.	7SRT
G. M. C.	7SRT
Good Will	7SRT
*Graham Bros.	7SDT
Gramm Bernstein	7SRT
Grant	7SRT
Hackett	7SRT
Hahn	7SLBT
*Hal	7SRT
*Harvey	7SRT
Hawkeye	7SRT
*Hendrickson	7SRT
*Hewitt-Ludlow	7SRT
*Highway-Knight	7SRT
Hoover	7SRT
*H. R. L.	7SRT
Huffman	7SRT
*Hurlburt	7SRT
*Huron	7SRT
*Independent	7SRT
*Italia	7SRT
International	7SRT
J. & J.	7SRT
J. & T.	7SLACTP
Jumbo	7SRT
*Kalamazoo	7SRT
*Karsan	7SRT
*Kearns	7SRT
Kelly-Springfield	7SRT
*Keystone	7SRT
Kimball	7SRT
*Kissel Kar	7SRT
*Kohler	7SRT
*Klemm	7SRT
*Koehler	7SRT
*K Z	7SRT
Larrabee-Devo	7SLBT

Lippard-Stewart	7SRT
*L M G	7SRT
Low-Bed	7SRT
*Maccar	7SRT
Mack	7SLBT
*Mason	7SRT
*Master	7SRT
*Maxim	SAENT
*Maxwell	7SRT
*Menominee	7SRT
Midland	7SRT
*Moreland	7SRT
Muskegon	7SLBT
Mutual	7SRT
*Nelson	SALT
*Nash	7SRT
*Nelson-LeMoon	7SRT
*Netco	7SRT
*Noble	7SRT
Northwestern	7SRT
Ogden	7SRT
*O. K.	7SRT
Old Hickory	7SRT
*Old Reliable	7SRT
*Oldsmobile	SAELT
Oneida	7SRT
Oshkosh	7SRT
Packard	7SRT
*Paige	7SRT
*Parker	7SRT
*Patriot	7SLBT
Peerless	7SRT
*Penn	7SRT
*Pierce Arrow R 9	18MT
Other models	7SRT
*Pioneer	7SRT
*Pittsburgher	7SRT
*Power	7SDT
Ranger	7SRT
Ranger	7SRT
Rehaker	7SRT
*Reo	12LT
*Republic	SAET
Reynolds	7SRT
*Riker	SAET
*Robinson	7SLBT
*Rock Falls	7SRT
*Rowe	SAET
St. Cloud	7SRT

*Samson	7SRT
*Sandow	7SRT
*Sanford	7SRT
*Sauer	7SRT
Seagrave	7SLBT
*Seneca	7SRT
*Shaw	7SRT
*Signal	7SRT
S. & S.	7SDT
Standard	7SRT
*Stanwood	7SDT
*Sterling	7SRT
Stewart	7SRT
*Stoughton	7SRT
Studebaker	SAET
(up to 1920)	12CPT
*Sullivan	7SRT
*Super	18LBT
Superior	1LRT
Swartz	7SLBT
Taylor	7SRT
*Texan	7SRT
*Tiffin	7SRT
*Titan	7SLBT
*Tower	7SRT
Trefle	7SRT
Transport	7SRT
Triangle	7SRT
Triumph	7SRT
*Twin City	7SRT
Union	7SRT
*United	7SRT
United States	7SRT
Universal	7SRT
Velie	7SRT
*Vim	7SRT
*Wainwsett	7SRT
*Walter	7SRT
*Ward LaFrance	7SRCP
*Watson	7SRT
*White Scott-on	18SMT
All others	7SLBT
*White Hickory	7SRT
*Wichita	7SRT
*Wilcox Trux	7SRT
*Wilson	7SRT
Winther	7SRT
*Witt-Will	7SRT
Wolverine	7SLBT

* These Cars Use A C Spark Plugs as Standard Equipment

Push Cards, Fortune and Novelty Boards

Push Cards with Seals

Push Cards with Seal. These cards are made of strong, stiff heavy card board, midget size, very convenient as they may be carried in the pocket. Plenty of space for customer to write his name. Large blank headings which gives ample space for advertisement.

Push cards are packed 100 in a bundle. On all orders for less than 100 the each price will be charged.

No. A1170.

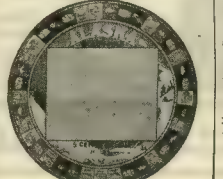
No. of holes	Per 100	Each
8	1.75	.03
10	2.00	.04
12	2.25	.04
15	2.50	.05
20	3.00	.05
25	3.25	.06
30	3.75	.06
35	4.25	.07
40	5.00	.07
50	5.50	.08
65	6.00	.09
70	7.00	.10
75	7.50	.10
80	7.75	.10
100	8.00	.11
120	9.00	.12

The Lucky Guy

Five-Cent Lucky Guy Seal Card. This card contains $55 poker hands each under a seal which sells for 5c a seal. Entire card when sold takes in $12.75 and pays out $10.80 worth of merchandise. This leaves the dealer a profit of $1.95 together with his profit on the sold merchandise.

No. A1178. Each..... .35

Alaska Gold Mine Board



Alaska Gold Mine Salesboard. A new novelty circular board, beautifully lithographed, in colors which makes it very flashy. The board contains 3000 holes, (in the new miniature size), and sells for 5c each. It pays out $67.50 in denominations up to $10.00. This board shows a very nice profit.

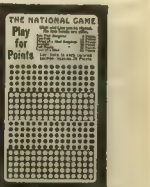
No. A1301. Each..... 5.00

Put and Take Boards

This Board Contains 300 Holes. Half the slips are "Puts" and half "Takes." When the player punches out a "put," he pays the dealer the amount printed on the slip and when he punches out a "take," the dealer pays him, in merchandise, the amount shown on slip. Slips pay from 5 to 25c. Board takes in 29.50 cash and pays out 21.25 in merchandise. This leaves the dealer 8.25 profit, besides his profit on the merchandise

No. A1198. Each..... .37

Poker Hand Board



Board has 300 Holes with printed slips showing poker hands. Slips pay out from 5 to 80c in trade. Board contains 120 winning hands. When all sold the board takes in 16.00 (100 sales at 5c each), and pays out 10.50 in merchandise. This leaves the dealer a profit of 4.50 in addition to his profit on the merchandise.

No. A1200. Each..... .37

Blank Knife Boards

We carry in Stock Blank Knife Boards, with special printed labels to hold 12 and 14 knives in two sizes 800 and 1000 holes. When ordering these boards be sure to mention which is wanted for 12 or 14 knife style.

No. SA40. 800 holes, each.. 1.25
No. SA41. 1000 holes, each.. 1.50

Fortune Telling Salesboards

Fortune Telling Salesboard. The players' fortune is concealed on the back of each ticket also, the number and serial number. Every dealer is protected, as each slip has a protective serial number and fortune printed on back, thus insuring every possible protection. Blank space on each board for advertisement. Sale sboards come in the following sizes:

No. A1168.

No. of Fortunes Per box.	Price Each
300	.50
400	.60
600	.80
1000	1.30
1200	1.60
1500	2.00
2000	2.60
2500	3.25
3000	3.70

Popular Push Card Premiums

A 70 Hole Printed Push Card, like illustrated, free with any of the premiums listed on this and the opposite page.

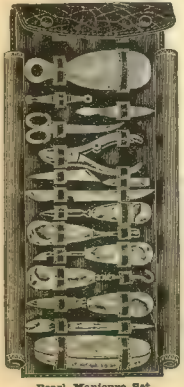
Card when sold takes in 14.95

The push card contains 70 holes and the cost of punching is as follows: No. 1 pays one cent. Nos. 2 to 18 are free. 19 to 30 pays the amount on slip. For example, No. 22 pays 22c, No. 28 pays 28c. All numbers over 30 pay 30c. No number pays more than 30c. When card is all sold the party holding the number corresponding with the number under the seal on top receives the premium as the card calls for.

These premiums listed were selected because they have proven to be fast sellers when used as push card premiums.

To assure yourself of receiving push cards with these items when ordering be sure to put down the letter P after number as per illustration (15A90P).

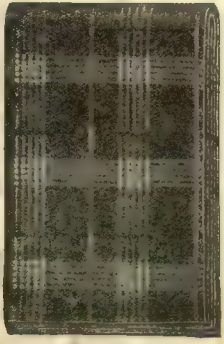
NOTE We do not sell these special printed push cards separately, as we give them free with the premiums listed on this and the opposite page.



Pearl Manicure Set
No. 15A75P 3.00

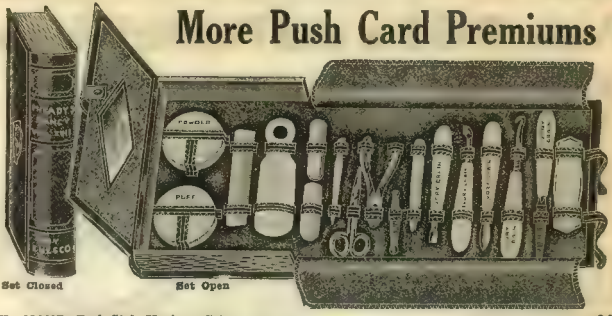
Chinese Deluxe Set
No. 25E6P..... 2.45

18-in. Leather Bag
No. 26S53P..... 3.50



Beacon Blanket
No. 43D395..... 8.95

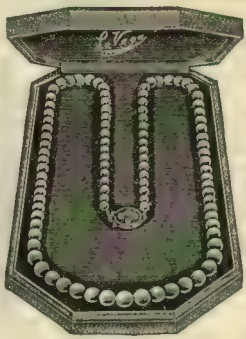
More Push Card Premiums



Set Closed — Set Open

No. 15A30P. Book Style Manicure Set..... 3.60

Beaded Bag
No. 85J79P..... 2.75



24-in. Pearl Necklace
No.90J42P..... 3.40

Electric Lighted Canteen
No. 15A117F..... 4.50

No. 16A29P. Travelling Set..... 4.50

Field Glass
No. 200J18P..... 4.00

ALVIN SILVER

Long-Life Plate

GEORGE WASHINGTON

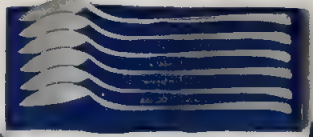
BRIGHT FINISH

INDIVIDUAL SALAD FORK SET
Per set $9.18

FIVE O'CLOCK TEAS
Six in unlined box $4.59
Six in lined box 5.49

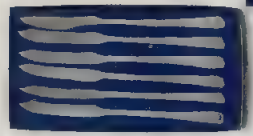
OYSTER FORK SET
Per set $6.05

BOUILLON SPOON SET
Per set $8.56



SIX ICED TEA SPOONS
Per set $9.08

CREAM LADLE
Cream Ladle, each $2.23
Gravy Ladle, each 2.92



BUTTER SPREADER SET
Per set $7.40

BUTTER KNIFE
Each $1.85

ORANGE OR GRAPEFRUIT SPOON SET
Per set $5.84

PICKLE OR OLIVE FORK
Each $1.74

SUGAR SHELL
Each $1.64

JELLY SERVER
Each $1.10

BERRY SPOON
$3.76

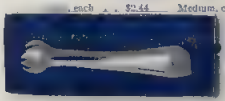
BUTTER KNIFE AND SUGAR SHELL
Per set $3.48

SIX COFFEE SPOONS
Per set $4.60

COLD MEAT FORK
. each . . $2.44 Medium, each $2.16

3 PIECE CHILD'S SET
Hollow Handle Knife, per set $4.62

SHORT HANDLE BABY SET
Spoon and Fork, set $3.50



SUGAR TONGS
Each $2.37

BABY SPOON
Each $1.25

TOMATO SERVER (not illustrated), Hollow Handle, $6.68, Flat Handle, $4.17

ALVIN PATENT

ALVIN SILVER

Long-Life Plate

GEORGE WASHINGTON

BRIGHT FINISH

KNIFE AND FORK SET

6 Hollow Handle Knives, 6 Flat Handle Forks

Dinner, per set $25.44 Dessert, per set $24.84

LADLES

Cream, each $2.20 Soup, each $9.04 Gravy, each $2.92

HOLLOW HANDLE PIE SERVER

HOLLOW HANDLE ICE CREAM KNIFE

Each . . $5.95

SIX HOLLOW HANDLE FRUIT KNIVES

Per set $14.52

BREAD KNIFE

Hollow Handle, each, $3.14

STEAK SET

8 pieces, per set $ 4.76 Knife length, 7 inches

4 pieces, per set $ 9.18 Knife length, 9 inches

SIX HOLLOW HANDLE ORANGE KNIVES

Per set $14.38

CHEESE SERVER

Hollow Handle, each, $2.44

LARGE CARVING SET

CHOP SET

one Mastermeal

2 piece Knife and Fork

Hollow Handle, $6.88

2 Piece Carving Set, Knife Blade 9 inches, per set . . . . . $ 9.08

3 Piece Carving Set, Knife Blade 9 inches, per set 14.60

5 Piece Carving Set, Large Knife Blade 9 inches, Small Knife Blade 7 inches, per set 22.52

2 Piece Game Set, Knife Blade 7 inches, per set 13.08

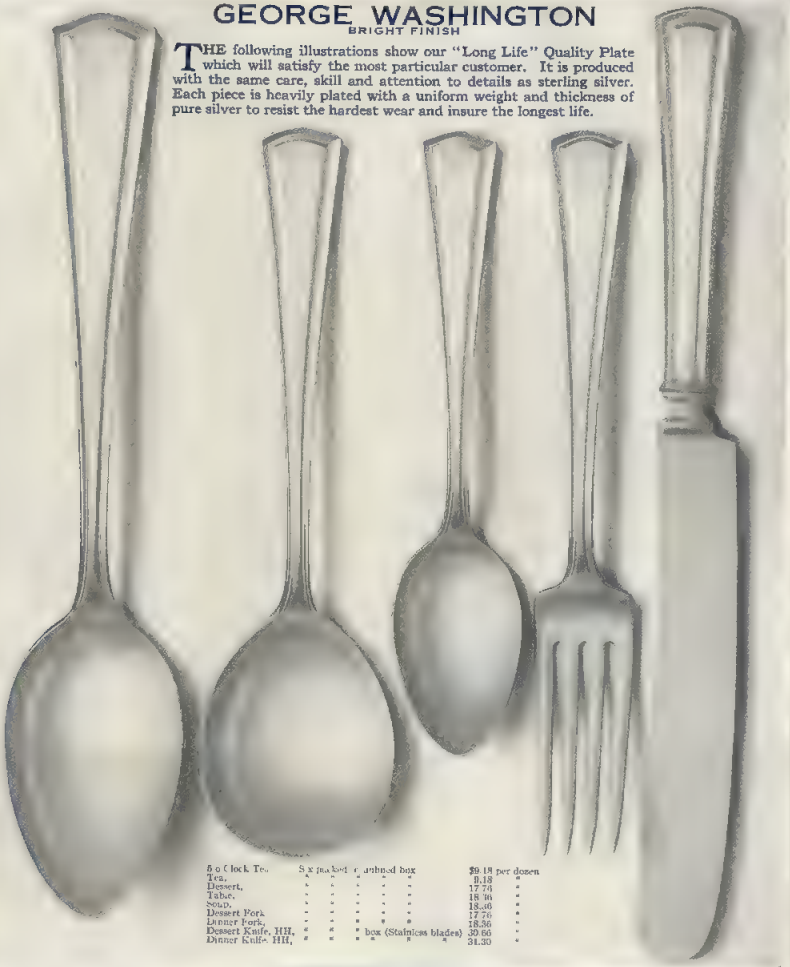
ALVIN PATENT

For prices of items not illustrated see complete price list

GEORGE WASHINGTON

BRIGHT FINISH

THE following illustrations show our "Long Life" Quality Plate which will satisfy the most particular customer. It is produced with the same care, skill and attention to details as sterling silver. Each piece is heavily plated with a uniform weight and thickness of pure silver to resist the hardest wear and insure the longest life.



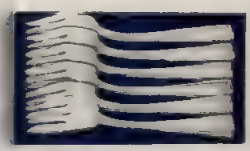
5 o'Clock Tea	Six pieces in lined box	$9.18 per dozen
Tea,	" " " "	8.18 "
Dessert,	" " " "	17.74 "
Table,	" " " "	18.90 "
Soup,	" " " "	18.36 "
Dessert Fork,	" " " "	17.76 "
Dinner Fork,	" " " "	18.36 "
Dessert Knife, HH,	" " " box (Stainless blades)	30.66 "
Dinner Knife, HH,	" " " " "	31.30 "

ALVIN SILVER

Long-Life Plate

LUXOR

PLATINUM FINISH



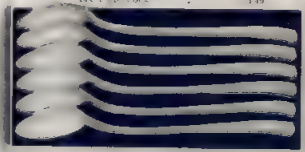
INDIVIDUAL SALAD FORK SET

FIVE O'CLOCK TEAS

Set, 6 Large Flat . . . $4.16
Set, 6 Tea Flat . . . 3.49

OYSTER FORK SET

BOUILLON SPOON SET



SIX ICED TEA SPOONS

Per set . . . $6.68

LADLES

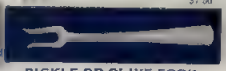
BUTTER SPREADER SET

$7.50

BUTTER KNIFE

Each . . . $1.45

ORANGE OR GRAPEFRUIT SPOON SET



PICKLE OR OLIVE FORK

Each . . . $1.74

SUGAR SHELL

Each . . . $1.01

JELLY SERVER

BERRY SPOON

BUTTER KNIFE AND SUGAR SHELL

Per set . . . $3.48

SIX COFFEE SPOONS

COLD MEAT FORK

Medium, each . . . $2.35

THREE PIECE CHILD'S SET

Hollow Handle, Knife, per set . . . $4.45

SHORT HANDLE BABY SET

Spoon . . . $1.45

SUGAR TONGS

Each . . . $0.87

SHORT HANDLE BABY SPOON

Each . . . $1.25

TOMATO SERVER (not Illustrated) Hollow Handle, $6.08; Flat Handle, $4.17

ALVIN PATENT

ALVIN SILVER

Long-Life Plate

The LUXOR Pattern

PLATINUM FINISH

	Set packed in Individual Box, $6.18 per dozen
5 o'Clock Tea,	" " " " " 9 18 " "
Tea,	" " " " " 17 76 " "
Dessert,	" " " " " 18 36 " "
Table,	" " " " " 18 36 " "
Soup,	" " " " " 17 76 " "
Dessert Fork,	" " " " " 18 36 " "
Dinner Fork,	" " " " " 30 65 " "
Dessert Knife, HH, {Stainless}	" " " " " 31 30 " "
Dinner Knife, HH, {Blades}	

ALVIN PATENT

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

ALVIN SILVER
Long-Life Plate

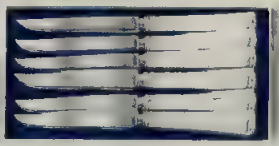
LUXOR
PLATINUM FINISH

KNIFE AND FORK SET
6 Hollow Handle Knives, 6 Flat Handle Forks
Dinner, per set, $25.44 Dessert, per set, $24.84

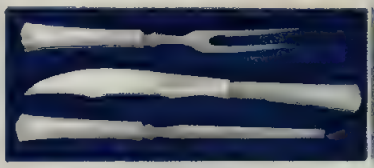
LADLES
Cream, each, $2.93 Gravy, each, $2.92

HOLLOW HANDLE PIE SERVER
Each $5.28

HOLLOW HANDLE ICE CREAM KNIFE
Each $7.05



SIX HOLLOW HANDLE FRUIT KNIVES
Per set $13.40



STEAK SET
3 pieces, per set, $13.78 2 pieces, per set, $9.18
Knife blade, 9½ inches Knife blade, 7¼ inches

CHOP SET [illegible]

SIX HOLLOW HANDLE ORANGE KNIVES
Per set $14.30

LARGE CARVING SET
2 Piece Carving Set, Knife Blade 9 inches, per set $13.08
3 Piece Carving Set, Knife Blade 9 inches, per set 19.60
5 Piece Carving Set, Large Knife Blade, 9½ inches, Small Knife Blade 7¼ inches, per set 32.62
2 Piece Game Set, Knife Blade 7¼ inches, per set. 13.08

CHEESE SERVER
Hollow Handle
each, $3.44

BREAD KNIFE
Hollow Handle
each, $5.14

ALVIN PATENT

For prices of items not illustrated see complete price list

KITCHEN CABINETS

Golden oak finish. Has large cupboard with double fancy glass doors, and two shelves, making three large compartments. Four small drawers underneath. Two large cutlery drawers. The two bins for flour and meal are lined with galvanized iron sheet. The capacity of each bin is 48 pounds. Has a sliding dough board in center. The top is made of polished metal.

Very attractive and useful in all kitchens.

	Each
No. 201 Base 45 in. wide, 26 in deep and 72 in. high, weight each crated 175 lbs.	$30 00

One in a crate

REFRIGERATORS

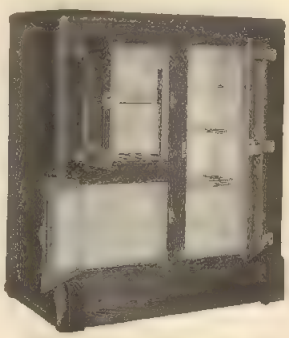
PILGRIM ONE-PIECE SEAMLESS PORCELAIN

These refrigerators satisfy the demands of the most discriminating housewife.

Constructed in "one-piece," this beautiful white porcelain interior is without a seam or square corner to collect the smallest particle of dirt.

The high grade porcelain tanks are fused with three coats of the finest grade porcelain on the market. Service and beauty are combined to the utmost in these one-piece seamless porcelain tanks.

Four bolts at top of ice chamber to which all popular makes of electric icing machines may be attached.



Three Door, Side Icing, Four Shelves

Hardwood case finished in golden oak. Every joint of outer and inner wall are tongued and grooved, making it air-tight.

Doors are massive, air-tight and equipped with strong, quick-action bronze, nickel plated trimmings.

Insulated with solid corkboard encased in double walls.

One piece seamless porcelain lined.

Heavy tinned woven wire shelves.

Will admit 75 pound cake of artificial ice measuring 11x13 x16½ inches.

No.	**7680**
Ice capacity, lbs.	125
Outside dimensions	
Width, in.	34½
Depth, in.	20
Height, in.	47
Ice chamber opening, in.	13¾x20¼
Ice chamber, in.	15¼x14½x22
Large provision chamber, in.	13½x14½x35
Small provision chamber, in.	15¼x14½x10
Weight each crated, lbs.	273
Each	$75.00

One in a crate.

*KITCHEN CABINETS

ARIEL

These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain tops.

Equipped with easy rolling casters and ant-proof caster cups. All metal bread and cake drawers with sliding metal lids.

Full swinging all metal flour bins. All hardware is rust resisting nickeled.

Equipped with roll curtain in top and special panel cards.

MODEL 7-12

All cabinets are equipped with five glass spice jars, one glass tea jar, one glass coffee jar and one glass sugar bowl.

Also equipped with cutting board and food chopper bracket

Height 68 Inches, Width 32 Inches, Depth 24 Inches.

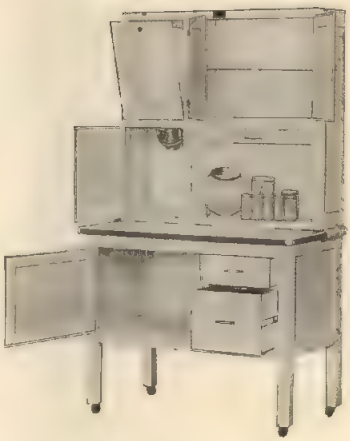
	Each
No. 7-12GO—Golden oak finish	$64.00
No. 7-12W—White enameled finish	71.00
No. 7-12G—Grey enameled finish	71.00
No. 7-12TG—Two tone grey oak finish	76.00
No. 7-12TB—Two tone brown oak finish	76.00

Weight each crated 180 pounds.

(*) F. O. B. factory, Peru, Ind

*KITCHEN CABINETS

ARIEL



These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain tops.

Equipped with rolling casters. All metal bread and cake drawers with sliding metal lids.

Tilting sifter flour bins.

Equipped with roll curtain in top.

MODEL 51-88

All cabinets are equipped with five glass spice-jars, one glass tea jar, one glass coffee jar and one glass sugar bowl.

Height 68 Inches, Width 40½ Inches, Depth 25 Inches.

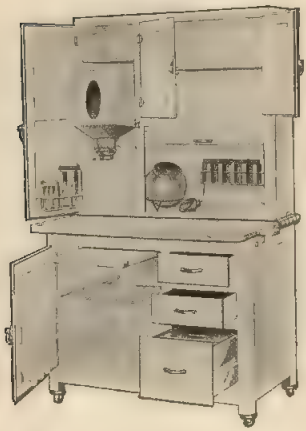
	Each
No. 51-88GO—Golden oak finish	$50.00
No. 51-88W—White enameled finish	57.00
No. 51-88G—Grey enameled finish	57.00

Weight each crated 185 pounds.

(*) F. O. B. factory, Peru, Ind.

*KITCHEN CABINETS

ARIEL



These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain top.

Equipped with easy rolling casters and with ant-proof caster cups. All metal bread and cake drawers with sliding metal lids.

Full swinging all-metal flour bins. All hardware is rust resisting nickeled.

Equipped with roll curtains in top and special panel cards.

Model 57-04

All cabinets are equipped with five glass jars, one glass tea jar, one glass coffee jar, and one glass sugar bowl.

Also equipped with cutting board and food chopper bracket.

Height 68 Inches, Width 40½ Inches, Depth 25 Inches.

	Each
No. 57-64GO—Golden oak finish	$64.00
No. 57-64W—White enameled finish	71.00
No. 57-64G—Grey enameled finish	71.00
No. 57-64TG—Two tone grey oak finish	76.00
No. 57-64TB—Two tone brown oak finish	76.00

Weight each crated 210 pounds.

(*) F. O. B. Factory, Peru, Ind.

*KITCHEN CABINETS

ARIEL

These kitchen cabinets are made of three ply panel construction throughout. Special reinforced.

Dust-proof lip doors and drawer fronts. Sliding all-white porcelain top.

Equipped with easy rolling casters and with ant-proof caster cups.

All metal bread and cake drawers with sliding metal lids.

Equipped with tilting sifter flour bins. All hardware is rust resisting nickeled.

Equipped with roll curtains in top and special panel cards.

Model 55-00

All cabinets are equipped with five glass jars, one glass tea jar, one glass coffee jar, and one glass sugar bowl.

Also equipped with cutting board and food chopper bracket.

Height 68 Inches, Width 40½ Inches, Depth 25 Inches.

	Each
No. 55-60GO—Golden oak finish	$59 00
No. 55-60W—White enameled finish	66.00
No. 55-60G—Grey enameled finish	66.00
No. 55-60TG—Two tone grey oak finish	71.00
No. 55-60TB Two tone brown oak finish	71.00

Weight each crated 205 pounds.

(*) F. O. B. Factory, Peru, Ind.

BOYCE MOTO-METER

BOYCE MOTO-METER will signal that more water is needed in radiator 10 or 15 minutes before the radiator starts steaming. It will indicate the need of more lubrication long before the motor is actually in danger. A broken fan belt, over-rich carburetor mixture, etc., is instantly detected. By indicating such things in time, the BOYCE MOTO-METER saves the car owner many expense bills incident to overheating, lost compression, warped valves, leaky piston rings, scored cylinders, burned bearings, etc. In cool weather it will show when the motor is wasting from 30% to 40% of gasoline and how much to cover radiator to prevent this waste.

How It Works

The column of red liquid, will tell at all times if the motor is operating too hot or too cold, or whether just right for maximum efficiency

Installation of Boyce Moto-Meters is extremely simple Any style can be installed within ten minutes' time by merely drilling a hole in the radiator cap and attaching. Complete directions are placed in carton with each instrument.

Prices on all moto-meters quoted on this page are manufacturer's list. Subject to special discount

DE LUXE MODEL

Is designed for the highest grade passenger cars. The temperature tube is ¼ inch in diameter, having a broad column of red liquid, readable at a great distance. The case is triple nickel-plated, and the finish of the entire instrument is of the highest quality of workmanship. Equipped with Schlaich lock. Size, 3⅜x5¾ inches. Weight in carton, 29 ounces.

No. 49—De Luxe Model Each, $15 00

STANDARD MODEL

A perfect heat-recording instrument of the highest type, with extremely broad ribbon-bore thermometer tube, designed for those who want the best. Because of its perfection of workmanship, the Standard Model has been selected as regular equipment on America's leading cars. Finished in black enamel with nickel plated retaining rings. Size 3⅜x5⅜ inches. Weight in carton 1 pound.

No. 9—Standard Model ..... Each, $10 00

No 9N—Full Nickel Finish.....Each, 10 00

UNIVERSAL MODEL

Slightly smaller than the Standard Model—a very handsome instrument, finished in all nickel. Beveled crystals add to its appearance. Size, 3x5 inches. Weight in carton, 14 ounces.

No. 10—Universal Model .....Each, $7.50

MIDGET MODEL

Designed especially for use on small cars. It has a polished nickeled frame and is finished with bevelled crystals and retaining rings, both front and rear. This instrument, except for its size, is identical with more expensive Boyce Moto-Meters for the larger types of car. Size, 2¼x4¼ inches Weight in carton, 10 ounces

No. 12 - Midget Model.. ..... Each, $3 50

SPECIAL FORD MODEL

Designed especially for use on Ford cars. It has a broad thermometer tube, which is easily readable even at a distance. It is provided with bevelled crystals and retaining rings, both front and rear, and is finished in polished nickel. The Special Ford cap with which it is equipped makes it an ideal instrument Size, 2¼x4¼ inches. Weight in carton 12 ounces.

No. 13—Special Ford Model. ...Each, $4 00

SPECIAL NAMEPLATE INFORMATION

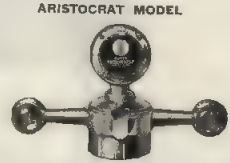
BOYCE-MOTO-METERS with stock design car nameplates will be furnished to dealers in De Luxe, Standard and Universal Models in any quantity. These will be inserted at the factory when so ordered, without extra charge

Special Car Nameplates with Dealer's Name and Address

Any dealer, who places an order for fifty (50) or more BOYCE MOTO-METERS, any one model (excepting Midget, Special Model for Ford or Aristocrat), one delivery, and on a non-cancellable order, will be furnished with a special nameplate without extra charge showing the nameplate design of the car he handles, together with the dealer's name and address engraved below.

Should dealer handle more than one make of car, we will permit an assortment of different car nameplate designs but only the same dealer's name and address will be engraved on the entire quantity of fifty (50). The assortment must also cover fifty (50) BOYCE MOTO-METERS of the same model. Time required for delivery —three weeks from receipt of order at factory.

ARISTOCRAT MODEL



The instrument itself is the Midget Mode. BOYCE MOTO-METER mounted on a Schlaich Cap Lock, which not only insures the BOYCE MOTO-METER against theft, but adds remarkably to the appearance of the car. In the bulls eyes at either end of the bar cap are spaces for initials or emblems, which are supplied free of charge when the purchaser returns the "Free Dial Postcard" which is packed with each instrument

The Aristocrat Model can be installed in five minutes, but can only be removed by owner.

Size, 7¼x4¾ inches. Weight in carton. 1 pound, 14 ounces.

No. 13F—For Ford.. . . . . .Each, $7.00

No. 13C—For Chevrolet ....Each, $7 50

The Aristocrat Model can be equipped with special insert ring for use on Maxwell and Overland cars, at an additional cost of 50 cents

SCHLAICH UNIVERSAL LOCK FOR BOYCE MOTO-METERS

Consists of nozzle, channel bar and cable lock nut, all made of solid brass, the nozzle being connected to channel bar by a nickel plated brass chain, making the entire device impervious to rust. Lock is simple and well-made, can be installed by anyone in a few minutes, as it requires a drilling nor mechanical work of any nature Nickel-plated and highly polished.

No. 1—Size ¾ inch, "De Luxe" and "Truck and Tractor" Models .Each, $3 00

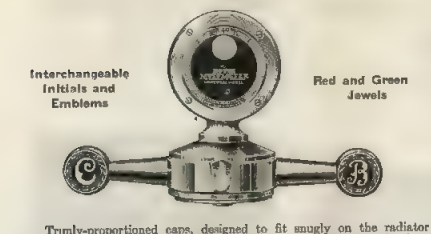
No. 2– Size, ⅝ inch; "Standard" and "Universal" Models .....Each, 2.70

No. 3—Size, ⅝ inch: "Junior," "Midget," and "Ford" Models.....Each, 2.70

Pack in individual cartons, ten cartons packed in one unit package.

SCHLAICH LOCK CAPS

MODELS A AND B



Trimly-proportioned caps, designed to fit snugly on the radiator filler neck, keeping the Moto-Meter at the correct elevation for best temperature indication and out of the driver's vision. Patented set-screw on Insert provides a POSITIVE LOCK for every type of Moto-Meter.

Clasp in front releases cover which tips back, allowing ample clearance for filling radiator. Eccentric action of clasp makes cap absolutely steam-tight. Pressure against pure gum rubber washer holds cap in position when closed, but when open can be easily turned about Insert eliminating any danger of stripping the threads against set-screw.

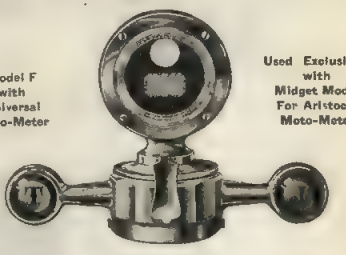
To Install:—Lock Moto-Meter to cap with collar and set-screw. Fasten clasp and screw on radiator neck; be sure gasket is in position to prevent leakage. Set-screw locking Insert to filler neck can be easily located by removing outer set-screw under hinge and revolving cap about Insert.

Model A—Outside diameter 3 inches. Designed for cars with narrow radiators. Will not strike hood when raised.

Model B—Outside diameter 3⅜ inches. For cars with large radiator necks. No adapter required for DeLuxe Moto-Meter.

Models A or B Caps—Complete with Inserts	Each, $3 00
Without Inserts	Each, 6.40
Insert Only	Each, 1.68
Red or Green Jewels, with Gold-Leaf Background. Per Pair,	.68

MODEL F



Fits 57 Makes of Cars

Identical in workmanship and material with Models A & B, but locks to filler neck with two set-screws located under arms. Designed for BOTH UNIVERSAL and MIDGET MOTO-METERS; does NOT require collar to raise stem for clearance. Clasp in front releases cover which tips back.

To Install:—Screw adapter firmly on radiator filler neck against copper gasket, using wrench, and lock set-screw with L shaped wrench. Place cap in position over adapter, tighten set-screws under arms and make doubly theft-proof by pounding in lead slugs. NO ADAPTER IS REQUIRED FOR FORDS.

Model F Caps—For Ford Cars	Each, $4.68
For Other Cars specified, complete with Insert	Each, 5 32
Insert Only—For Aristocrat Model Boyce Moto-Meter	Each, .68
Red or Green Jewels with Gold-Leaf Background	Per Pair, .68

SPECIFICATIONS FOR CAR MODELS

The Letters A, B, and F refer to the three models of Caps manufactured:—

"A" CAP. Outside diameter 3 inches. Especially designed for cars with narrow radiators, will not strike engine hood when raised.

"B" CAP. Outside diameter 3⅜ inches. For cars with large radiator necks. The only cap with initial design which the DE LUXE MODEL MOTO-METER will fit without a special adapter.

"F" CAP. Only small type cap manufactured that is designed for BOTH MIDGET and UNIVERSAL MOTO-METERS.

The Numerals 1 to 31 specify the insert to fit the various radiator filler necks.

Example: Dodge A2 B2. The Dodge requires a No. 2 insert and either an A or B Cap. All "A" inserts are interchangeable in "A" Caps, "B" inserts in "B" Caps and "F" inserts in "F" Caps, but are not otherwise interchangeable.

Abbott Detroit 6 24 (1916) B3
Abbott Detroit (early models) B4, F4
Ace A1, B1
Allen Model 43 (1920-1923) A2 B2
Allen, Model 43 (1918 and earlier B5, F5
Ambassador B17
American Beauty 6 A7, B7
American Motors A25, B32
Anderson Model 17 . . . . . A2 B2
Anderson 40 . . . . . A1, B1
Anderson 30 . . . . . A7, B7
Apperson (1917 and earlier B4, F4
Apperson (1918-1923) B16
Auburn (Beauty 6) B8
Bay State B6
Bedlo B21
Brewster B5, F5
Briscoe B12
Buick (19 7 and early models B13
Buick 4 (1918 to 1923) A1
Buick 6 (1918 to 1923) A1 B1
Buick 6 (1924) B31
Cadillac B3
Case (1913-1915) . . . B4, F4
Case (1916-1917) . . . B20
Case (1918 and later) . . . B2
Chalmers B3
Chalmers (1921 and earlier B4, F4
Chandler B5, F5
Chevrolet (all models except 490) A3A
Chevrolet (early models) A10
Chevrolet 490 . . . . . F11
Cleveland A2, B2
Cole B5, F5
Cole (1916 and earlier A2, B2
Columbia (1921) B3
Comet B29
Commonwealth B2
Crane Simplex . . . B5, F5
Crawford B4, F4
Crawford (1921 and earlier A7, B7
Crow Elkhart (early models) B3
Crow Elkhart B8
Cunningham V 4 . . . A7, B7
Cunningham B21
Daniels (1921-1923) B5 F5
Davis 1920 and earlier B4 F4
Davis (1921) B5, F5
Dejroiter B5, F5
Dixie Flyer B22
Diamond T B3
Dodge A2, B2
Derris B27
Dort B3
Duesenberg . . A18, B18, F18
Dupont B13
Durant (4 cyl) . . . A1, B1
Durant (6 cyl) . . . B3
Paul A12
Fleur B8
Flint B5, F5
Flyer Capable 48
Essex B3
Flint A1
Ford F24
Gardner B3
Gray B3
H C S . . . . . H, F4
Handley Knight (1921) B3
Haynes H4, F4
Hudson A3A
Hupmobile (1917 and earlier) B6
Hupmobile (1918-23) . . A12
Imperial B4, F4
Interstate B4 F4
Jackson (1921) B3
Jeffrey B5 F5
Jewett B5 F5
Jordan (1918-1921) . . . B4
Jordan (1922-1923) . . . A25
King (1918) B1, F4
King (1919-1923) . . . A2, B2
Kissel (custom built) . B16
Kissel (early models) A7, B7
Kissel Silver Special . . B28
Kline B9
Krit (42-50) B3
Lafayette B3
Leach BF5, 5
Lexington (Model 6T) . B3
Lexington (Model T.T.C.) B28
Lexington (1921) . . B4, F4
Liberty (10A, 10B, 10C) B27
Liberty B4, F4
Likes 8 . . . . . B3
Locomobile B19
Mclaughlin 6 . . . . . B5
Maxwell B3
Marmon . (1920-21) A1, B1
Marmon (1919 and earlier B8
Marmon 1922-23) B8
Maxwell A18, F18
Mercer B8
Mitchell B4, F4
Moline-Knight B3
Monroe (1921) . . . B4, F4
Moon (early models) . . B3
Moon 6-40 . . . . . B4, F4
Nash A1
National (1917 and earlier) B4, F4
National (1918-1923) B16
Noma (1921-1923 . . . A1, B1
Norwalk B3
Oakland (1916) B26
Oakland (1917-23) . . . A1, B1
Oldsmobile 8 (1922 and earlier) F4
Oldsmobile 8 (1923 and 1924) A8A, F8A
Oldsmobile 6 1924 . . . F11
Oldsmobile 4 and 6 . . . F4A
Owen Magnetic . . . B6, F6
Paige B5
Pan American (1919 and earlier) B9
Pan American (1920-1923) B5, F5
Patfinder B4, F4
Patterson (1921) B3
Pee-bee (1921) B1
Pierce-Arrow B4
Pierce-Arrow (early models) B6
Pilot A2, B3
Premier (1912-1916) . . B20
Premier (1917-1923) . . B15
Premo B3
R & V Knight (1921) . B3
Regal (Model J) . . . A2, B3
Rex A10
Revere B4 F4
Rickenbacher . . . A18, F18
Reamer B17
Saxon Duplex A1, B1
Saxon 6 . . . . . B4, F4
Scripps Booth (1918 and earlier) B9, F5
Scripps Booth (1919-1921) B4, F4
Seneca (1921 and earlier) A1, B1
Seneca (1922-1923) . . A2, B2
Sheridan B3
Standard 8 (1920 and earlier) B4, F4
Stanchard 8 (1921) B5, F5
Stanley B9
Stanwood 6 . . . . . A7 B7
Star F11A
Star 1924 . . . . . F11
Stearns Knight (4 cyl 1917-1918) . . B6, F5
Stearns Knight (1919 1921 . . . . . B6
Stearns Knight . . . A4, B4
Stearns 4 1921) . . . A1, B1
Stevens Duryea (early models) B5, F5
Stephens B4, F4
Stevens Duryea (E) . . B21
Studebaker A2
Stutz (early and 1917) B4, F4
Stutz (1918-1923) . . . B14
Templar (1921 and earlier) B4, 14
Templar (1922-1923) . B6
Velie 58 (1923) B20
Waltham 6 . . . . . B23
Washington A7, B7
Westcott B4, F4
White B4, F4
Wills St. Claire B3
Willys-Knight (early 1922) B20
Willys-Knight (1923) . . B18, A18, F18
Winther A2, B2
Winton 6 . . . . . B4, F4

For cars not listed give diameter of radiator neck, internal or external and threads per inch.

RADIATOR CAPS

Nickel Plated Phosphor Bronze

Silver Bar Radiator Cap For All Cars

A serviceable radiator ornament designed to replace the ordinary radiator caps on all makes of cars. Made from high grade phosphor bronze, heavily nickel plated and polished. Every cap is drilled and furnished with Boyce Moto-Meter plugs. Length of cap, 8¼ inches.

OUTSIDE THREAD

No.	Size Inches	Thread Nos.	Each
1555	1⅛	16	$2 00
1556	2⅛	16	2 00
1556A	2	16	2 00
1558	2	18	1.20
1559	2¼	14	2 00
1570	2½	16	2 00
1570A	2½	14	2.00
1603—Buick 4 cyl., 1924			2.00

INSIDE THREAD

No.	Size Inches	Thread Nos.	Each
1554	1¾	16	$1.20
1557	2⅛	16	2.00
1557A	2⅛	18	2 00
1560	2	18	2 00
1560A	2	16	2 00
1561	1⅞	16	2 00
1562	2⅛	16	2 00
1596	2	16	2 00
1596A	2	18	2 00
1601	2⅛	16	2 00

Nickel Plated Phosphor Bronze

Silver Wing Radiator Cap For Ford Cars

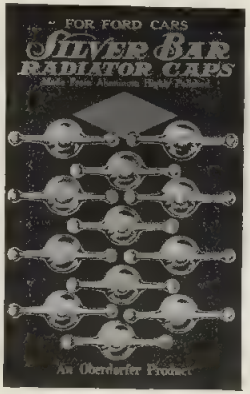
No. C1558—Length 6½ inches. Made of high grade phosphor bronze, highly nickel plated ..... Each, $1 30
In individual cartons

No. C1558D—One dozen Silver Wing Caps described above, mounted on attractive display card Per Card, $14 40

Polished Aluminum

Silver Bar Radiator Cap For Ford Cars

No. 1577 Length 6½ inches Made of high grade cast aluminum, highly polished, center can be punched out easily to insert Moto-Meter ....Each, $0 54



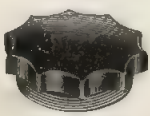
No. 1577D—One dozen Aluminum Silver Bar Caps described above, mounted on attractive Display card Per Card, $5 00

LIST OF CARS

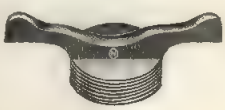
With Stock Number of Phosphor Bronze Cap Required for Each

NAME OF CAR	CAP No.
Apperson 1921 and later Models	1570A
Auburn	1567
Briscoe	1561
Buick	1557
Buick, Four Cylinder, 1924	1603
Buick, 6 Cylinder, 1924	1601
Cadillac	1562
Chalmers	1556
Chalmers '22, '23	1562
Chandler	1559
Chevrolet 490	1554A
Chevrolet 490 late Model	1554
Chevrolet Baby Grand	1582
Chevrolet, Little Six	1557A
Chevrolet Royal Mail	1582
Cleveland	1560
Cole	1559
Davis	1556
Dodge	1560
Dodge Special, 6¾ inch	1596A
Durant, 4 cylinder	1557
Durant 6 cylinder	1562
Earl	1561
Elgin 1918 and later models	1559
Empire	1555
Essex	1562
Ford	1558
Gardner	1562
Grant	1562
Gray	1556
Haynes	1556
Hudson 6-40	1562
Hudson Super-Six	1562
Hupp 1918 and later models	1561
Interstate	1556
Jackson	1562
Jeffrey	1559
Jewett	1559
Jordan 1917	1556
King	1556, 1556A
King '23	1559
Kissel-Kar 1918 and later models	1579A
Lexington	1556
Lexington 23	1562
Liberty	1556
Lincoln	1562
McFarlan	1559
Marmon all models before 1921	1557
Marmon 1921, '22, '23, '24	1557A
Maxwell 1915, '16, '17, '18	1554
Maxwell, 1919 and later models	1560A
Maxwell Special, 6¾ inch	1596A
Mercer	1562
Mitchell	1556
Moline	1562
Moon 1921, '22, '23	1556
Nash	1557
National	1570A
Oakland	1567
Oldsmobile 37, 45, 43A, 46, 47	1556
Oldsmobile 42, 43	1559
Oldsmobile, Light Six 1924	1554
Overland, 4 Cylinder, 1923	1560A
Owen Magnetic	1559
Paige	1559
Patterson	1562
Peerless	1562
Pierce-Arrow	1556
Premier	1556
Reo	1554A
Rickenbacker	1560A
Saxon 6 cylinder	1556
Scripps-Booth late models	1556
Standard Car 8 cylinder	1559
Star	1554
Stearns 4 and 6 cyl '23, '24	1558
Stearns-Knight, 4 cyl	1559
Stearns-Knight, 8 cyl	1562
Stephen	1556
Stevens-Duryea	1559
Studebaker	1560
Templar	1556
Velie 1920 and later models	1570
Wescott including '25 '22 '23	1556
Willys-Knight 1922 '23	1560A
Willys-Knight 1921	1569
Wills-Saint-Claire	1562
Winton	1556

STANDARD RADIATOR CAPS FOR FORD CARS



No. 58—Solid brass base with special condensite composition top, guaranteed to withstand any radiator heat; 2½ inches diameter
Each, $0 84



No. 3926N—Nickel-plated ..... Each, $0 60

2834B AIR COMPRESSORS

Brunner.

Since the garage busines became a business, Brunner Compressors have been built in sizes and types to meet each new demand, and the present offering is complete. The smallest bicycle shop or the largest and busiest filling station can select a Brunner of right size to serve economically, reliably and profitably.

Brunner machines have many remarkably and exclusive features. All running surfaces are ground and polished in oil. All fitted joints are ground and screws or bolts locked. All valves are removable and housed in brass bonnets. Hammered rings, three to each piston, are employed. Any model can be reconditioned and rebuilt to three oversizes. In fact, the points are so many that it is best to sum up and state that a Brunner is the best that money can buy. Prices are well in line with the cost of ordinary machines.

MODEL 102 COMPRESSOR

Twin cylinder 1¼x 2½". Divided load type, displacing 2.6 cu. ft. at 350 R.P.M. to 3.4 cu. ft. at 450 R.P.M. Splash lubrication to pistons and main bearings as well as to connecting rods. All surfaces ground

For nearly twenty years this celebrated Brunner model has been the standard of the garage field. Today it is the right size to serve 80% of the automotive merchants For power economy, freedom from grief, long life, and consistent reliability, this compressor has never been equaled.

With any storage tank up to 50-gallon capacity, No. 102 can be run with ½ to 1 H. P., depending upon speed and pressure. Pressure in a 32-gallon tank can be raised from 100 lbs. to 175 lbs. in about twelve minutes, compresor turning at 350 R. P. M.

Special air uses, such as pneumatic tools or air driven gasoline pumps, will necessitate larger compressor, but for average use the Model 102 is the ideal investment.

Height 13 inches, length 6½ inches, width over two 2-inch pulleys, 10 inches. Outlet for ¼-inch iron pipe. Net weight is 50 lbs. Shipping weight, 70 lbs.

No. 102—Without pulleys. Each.....$55.00
No. 102—With 9-inch Tight & Loose Pulleys (furnished unless otherwise specified). Each..... 61.00
No. 102—With 14-inch Tight Pulley. Each..... 59.00
No. 102—With 14-inch Tight and Loose Pulleys. Each..... 65.00
For vacuum service, common intake fitting, extra.. 3.50

Note—If sub-base as shown in illustration is not desired, deduct $5.00 from list price.

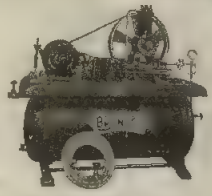
GARAGE OUTFIT NO. 1.

For Garages Housing up to 50 Cars, and Large Vulcanizing Shops.

One **No. 102** Belt Driven Compressor, 9-inch Tight and Loose Pulleys.....$61.00
One **45-gallon** 18x43 inches Seamless Steel Tank (for 175 lbs. working pressure)..... 58.00
One **Model "B"** Air Gauge..... 8.00
One **No. 70** Horizontal Check Valve, ¼-inch..... 3.75
One **No. 73** Safety Valve for Air Tank..... 2.50
One **No. 83** ¼-inch Needle Valve..... 2.25
One **No. 83** ⅜-inch Needle Valve..... 2.25
One **No. 82** ⅜-inch Needle Valve with Swivel Hose Connection..... 2.25
Two **Specially Ground Brass Unions,** ¼-inch and ⅜-inch..... 1.15
One **Automatic Tire Connection**..... 1.70
One **25-ft. Drop Line ¼-inch "Resistoil Air Hose.** 7.00

Total List Price.....$144.85

MODEL 932 ASSEMBLED UNIT



Complete automatic air plant with 2.5 cu. ft. Brunner No. 102 Compressor, ½ H. P. motor, unloader-controller, adjustable belt tightener, 32-gallon seamless steel tank, and accessories. All joints machined and locked. Every part replaceable and accessible.

The most popular type of Compressor unit is found in this Brunner Model. Used the world over by accessory and tire stores, oil stations, car agencies and repair shops; everywhere, in fact, except where special pneumatic tools or appliances require greater volume of air. In average service the No. 932 will run at a daily cost of about fifteen cents and will continue in good form fifteen to twenty years. This model can be reconditioned at small cost, or rebuilt in the factory to three oversizes.

Model 932 is silent at any pressure. Belt is doubly adjustable. Unloader-controller maintains tank pressure and relieves starting load. In fact, air supply is constant and automatically maintained without attention or effort by the user. Every detail of design, construction and operation is perfect.

Weighing 430 lbs. net, this model comes fully equipped stands 40 inches high and measures 18x45½ inches on the floor. Shipping weight is 585 lbs. Tank outlet tapped for ¼-inch pipe line. Hose line is 25-foot length genuine "Resistoil", with fittings.

No. 932—With 1-Phase A. C. 110-220-Volt 60-Cycle Motor.....$325.00

No. 932—With 1-Phase A. C. 110-220-Volt 25-Cycle Motor..... 340.00

No. 932—With 1-Phase A. C. 110-220-Volt 40-Cycle Motor..... 340.00

No. 932—With 110-Volt Direct Current Motor.. 325.00

No. 932—With 220-Volt Direct Current Motor.. 325.00

No. 932—With 32-Volt Direct Current Motor.. 330.00

Note—Motors not listed are specially quoted on application.

Brunner.

MODEL 52 PORTABLE OUTFIT

A portable outfit should have sufficient tank capacity to fill several tires without recharging, and the power plant should be large and fast enough to raise the presure in a few moments while the machine is out of service. Model 52 answers both requirements and also carries a drawn seamless tank, the only air reservoir that will endure portable service.

Brunner No. 102 (2½ cu. ft.) geared to ½ H. P. motor, mounted with 45-gallon seamless tank on all-metal truck. Moves and guides very easily.

The novelty of such an outfit makes a big appeal to the public. It is an attractor of trade for the automotive retailer.

Model 52 is completely equipped, weighing net 420 lbs., packed 580 lbs. Large and handsome in gloss black enamel, it stands four feet high and measures 45 inches long by 27 inches wide. Hose line and drop cord are included.

No. 52—Tank with Truck only, without motor or compressor, to be charged from stationary outfit $135.00
No. 52—With 1-Phase A. C. 110-220-Volt 60-Cycle Motor 315.00
No. 52—With 1-Phase A. C. 110-220-Volt 25-Cycle Motor 330.00
No. 52—With 1-Phase A. C. 110-220-Volt 40-Cycle Motor 330.00
No. 52—With 110-Volt Direct Current Motor 320.00
No. 52—With 220-Volt Direct Current Motor 320.00
No. 52—With 32-Volt Direct Current Motor 320.00

Note—Motors not listed are specially quoted on application

MODEL 66 PORTABLE TIRE INFLATOR

Fleet owners can ill afford to waste driver and car time at public air lines, so they are buying Brunner No. 66 for private use. Any fleet of three or more cars can save the cost of this equipment in a year's time. Merchants, bus operators, fire stations, and all "company garages" will eventually have a Brunner 66.

Tires of any size can be hardened to highest pressure in a few seconds. Even a truck tire can be inflated from flat to 120 lbs. in a scant few moments. Electric cord and hose line total 40 feet, giving this machine a wide working radius. Total weight is only 90 lbs. Shipping weight, 145 lbs. No. 66 is 15½ inches high, 15 inches wide, and 20½ inches long.

Complete inflating outfit with Model 36 Compressor driven by ¾ H. P. motor to displace nearly two cu. ft. per minute. An oil trap is added to insure clean, dry air to the tires.

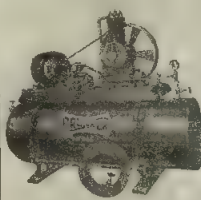
No. 66—With 1-Phase A. C. 110-220-Volt- 60-Cycle Motor $155.00
No. 66—With 1-Phase A. C. 110-220-Volt 25-Cycle Motor 170.00
No. 66—With 1-Phase A. C. 110-220-Volt 40-Cycle Motor 170.00
No. 66—With 110-Volt Direct Current Motor 163.00
No. 66—With 220-Volt Direct Current Motor 163.00
No. 66—With 32-Volt Direct Current Motor 163.00

Note—Other motors are supplied at special price.

MODEL 68 STATIONARY INFLATOR

Same as No. 66, but without wheels, handle, or switch. Excellent for private garage. No. 68, corresponding to No. 66 electric specifications, at list price reduction of $9.00

MODEL 965 ASSEMBLED UNIT



Completely equipped, automatic heavy-duty unit for all manner of air service, 1¼ H. P. motor drives Brunner No. 105 compressor (6 cu. ft.) and quickly recharges the 65-gallon seamless air tank, when automatic controller "cuts in." Motor starts "no load." All joints machined and locked.

The operation of this giant type outfit is as smooth and silent as an eight-cylinder motor. Nevertheless, Brunner practice of grinding all fitted joints is carried out, blocked cap screws are used to clinch the power plant on the saddles, and the heavy seamless tank is clamped in place with four heavy iron straps. Years of constant operation will not affect the rigid stability of this rugged and reliable outfit

Model 965 has ample capacity for the largest and busiest filling station, even handling three or four air-driven gasoline pumps. Pneumatic truck tires are quickly inflated from the large tank. No degree of air demand will find it unready or inadequate.

While space is not wasted, and the whole assembly is very compact, the entire unit is not small. The top of the compressor reaches 48½ inches from the floor. Length over all is 65 inches, and extreme width is 22 inches. The weight, 775 lbs., is too great for overhead location. Shipping weight is 970 lbs.

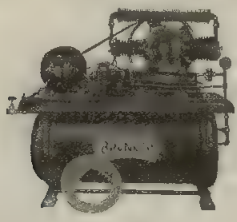
No. 965—With 1-Phase A. C. 110-220-Volt 60-Cycle Motor $560.00
No. 965—With 2 or 3-Phase A. C. 220-440-Volt 60-Cycle Motor 530.00
No. 965—With 1-Phase A. C. 110-220-Volt 25-Cycle Motor 580.00
No. 965—With 2 or 3-Phase A. C. 220-440-Volt 25-Cycle Motor 560.00
No. 965—With 220-Volt Direct Current Motor 615.00

Note—Other motors are supplied at special prices.

AIR COMPRESSORS

Brunner.

MODELS 939, 949 AND 969 ASSEMBLED UNITS



The Brunner two-stage outfit is built with the safest and most expensive tank—drawn seamless steel that will endure for years without developing annoying leaks or deteriorating to the point of becoming a public menace. The entire assembly follows engineering soundness as typified by the use of such a tank. The unit at any reasonable speed or any pressure is silent, free from vibration, and runs smoothly without rattle or the familiar thump-thump of common two-stage outfits.

The Brunner Model 939 is the fastest-working ¾ H. P. unit built. Pressure in a 32-gallon tank rises from zero to 175 lbs. in less than twenty-five minutes. A pressure rise of 25 lbs. is a matter of five minutes or less. The answer is not excessive speed; it is the astonishing e ciency produced by dual valves, larger intercooler and snugly fitted, polished pistons. No other machine approaches this air delivery with a similar motor.

Equally good proportioned results are had with the larger models 949 and 969. The first of these mounts the same compressor, but with 1 H. P. motor, and with 45-gallon seamless steel air tank. The No. 969 also uses the same compressor and 1 H. P. motor, with a 65-gallon seamless steel tank. Pressure rise is produced in about equal time by all three units, as the compressor is proportionately speeded to tank size in each case. It is obvious that the smaller unit has the longer life, but the larger assemblies, running at higher speed, are nevertheless in great favor with oil stations and other busy establishments. Long life seems not so vital when parts are so quickly and cheaply replaced.

The outfits are completely equipped as illustrated.

Table of Specifications.

Model 939—¾ H. P.; capacity 3 cu. ft. per minute; tank size 32 gallon; weight, 525 lbs.; height, 40¼ inches; floor space, 19½x45½ inches; shipping weight. 630 lbs.; boxed for export, 30 cubic feet.

Model 949—1 H. P.; capacity, 4 cu. ft. per minute; tank size 45 gallon; weight, 650 lbs.; height, 45½ inches; floor space, 24x45½ inches; shipping weight, 774 lbs.; boxed for export, 43 cubic feet.

Model 969—1 H. P.; capacity, 4½ cu. ft. per minute; tank size, 65 gallon; weight, 755 lbs.; height, 45½ inches; floor space, 24x60 inches; shipping weight, 950 lbs., boxed for export, 57 cubic feet.

PRICES:

No. 939 with—

1-Phase A. C. 110-220-Volt 60-Cycle Motor	$370.00
1-Phase A. C. 110-220-Volt 25-Cycle Motor	394.00
1-Phase A. C. 110-220-Volt 40-Cycle Motor	394.00
110-Volt Direct Current Motor	372.00
220-Volt Direct Current Motor	372.00
32-Volt Direct Current Motor	372.00

Note—Other motor equipment specially quoted.

No. 949 with—

1-Phase A. C. 110-220-Volt 60-Cycle Motor	$410.00
1-Phase A. C. 110-220-Volt 25-Cycle Motor	434.00
1-Phase A. C. 110-220-Volt 40-Cycle Motor	434.00
110-Volt Direct Current Motor	412.00
220-Volt Direct Current Motor	412.00

Note—Other motor equipment quoted on request.

No. 969 with—

1-Phase A. C. 110-220-Volt 60-Cycle Motor	$440.00
1-Phase A. C. 110-220-Volt 25-Cycle Motor	464.00
1-Phase A. C. 110-220-Volt 40-Cycle Motor	464.00
110-Volt Direct Current Motor	442.00
220-Volt Direct Current Motor	442.00

Note—Motors of other types at relative prices

CHICAGO PNEUMATIC TOOL CO.

Chicago Pneumatic Bldg.
6 East 44th Street, NEW YORK
SALES AND SERVICE BRANCHES ALL OVER THE WORLD

Portable and Stationary Air Compressors

Products

Air and Electric Portable Coal Drills (see page 832); Hammer Drills; Portable and Stationary Air Compressors; Little Giant Pneumatic Portable Mine Hoists; Boyer Pneumatic Riveting and Chipping Hammers; Little Giant Electric Drills and Grinders; Air Hose; Accessories, etc.

Chicago Pneumatic Mine Car Compressors

The flexibility and economy of this compressor outfit is obvious since it can be moved to the point of distribution, resulting in a great saving in line losses and eliminating troublesome and expensive systems of piping. Leakage and friction losses are inevitable where the air is used at a great distance from the compressor, and where the piping is of a more or less temporary nature and subject to abuse, as is frequently the case in newly worked portions of a mine, the line losses are high.

Chicago Pneumatic Mine Car Compressor (Compressor Side)

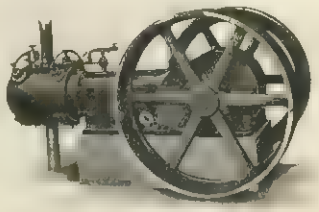
The outstanding features of Chicago Pneumatic Mine Car Compressors are: ruggedness, simplicity, efficiency, totally enclosed construction and Simplate Flat-disc Air Valves. The compressor is of the horizontal single-stage type and possesses all of the superior features of the Company's standard straight line compressors. It is water-cooled and geared to an electric motor by means of a sturdy herringbone gear and pinion. The complete outfit, consisting of compressor, air receiver, differential unloader, electric motor and starter is mounted on a substantial all-steel mine car which is readily adjustable to suit any track gauge commonly found in mines. The wheel base is sufficiently short to readily negotiate sharp curves. The air receiver is furnished with a pressure gauge and a pop valve, set for 110 pounds.

Ask for Bulletin No. 750.

Stationary Air Compressors

Class N, single-stage, steam and power-driven machines represent the highest development yet attained in the construction of compressors of small and medium capacities. Twenty-five years of continuous manufacturing experience form a BUILT IN part of their sturdy, simple and compact design.

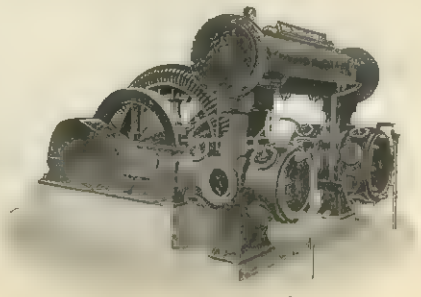
Ask for Bulletin 720.



Chicago Pneumatic Single-Stage Belt Driven Class N-SE Air Compressor

Class O duplex steam, belt and motor-driven machines contain the many advantageous features of the smaller types. The Simplate Flat-disc Air Valves are a feature of all compressors made by this company. They consist of simple steel plates operating over ports in a valve seat. They are held against the seat by volute springs of a special alloy steel and are kept in position by a valve keeper. The valves require no lubrication. They are light, rugged and readily accessible. All parts are interchangeable.

Ask for Bulletin 400.



Chicago Pneumatic Class O-CE Air Compressor

INGERSOLL-RAND COMPANY

11 BROADWAY NEW YORK

BRANCHES THE WORLD OVER

Mine Power Plant and Coal Cutting Machinery

Products

Air, Gas and Ammonia Compressors; Air Receivers and Pressure Tanks; Air Aftercoolers; Air Reheaters; Turbo Blowers and Compressors; Oil, Gas and Steam Engines; Marine Engines; Condensers; Air Pumps for Condensers; Vacuum Pumps; Steam Jet Pumps; Ice Making and Refrigeration Machinery and Plants. For other products see pages 768, 769, 838, 839 and 840.

Class "FR-1" Steam-Driven Compressors

Single-stage, double-acting, straight-line, steam driven compressors. Running parts and the adjustable removable main bearings of genuine babbitt are lubricated by an automatic flood system. The inlet and discharge valves are of the Ingersoll-Rand Plate Type. The air cylinder is direct-connected to steam engine having balanced piston valve with "Wide Range" automatic cut-off fly-wheel control governor, making it possible to operate with high pressures and superheated steam, as well as with moderate pressures and saturated steam. Bulletin 3050.

Ingersoll-Rand Class "FR-1" Steam Driven Compressor

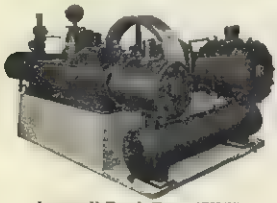
***DATA ON CLASS "FR-1" SINGLE-STAGE COMPRESSOR**

Piston Displacement Cu. Ft. per Minute	Air Pressure Designed For Lbs. Gauge Min.	Air Pressure Designed For Lbs. Gauge Max.	Steam R.P.M.	I.H.P. in Steam Cylinder Min.	I.H.P. in Steam Cylinder Max.	Overall Dimensions Feet and Inches Length	Width	Height from Floor
64	80	125	300	5.3	8.4	3-7	2-4	3-7
82	80	100	300	6.8	10.8	3-7	2-4	3-7
136	80	125	300	14.2	26.6	4-10	2-8	4-1
173	80	100	300	16.1	29.4	4-10	2-8	4-1
246	80	125	275	37.0	44.1	5-2	3-4	4-9
325	60	100	275	25.2	64.1	5-11	3-4	4-9
386	80	125	300	51.0	68.1	13-8	4-1	5-10
528	40	100	250	47.0	88.1	13-11	4-2	5-10

*Data on standard machines for low pressures on request.

Types "XR" and "XPV" Steam Driven Compressors

Duplex construction, single or two-stage with simple or compound steam cylinders, dust-proof enclosed construction, Ingersoll-Rand plate inlet and discharge valves, automatic lubrication for all moving parts and force-feed lubrication for air and steam cylinders.



Ingersoll-Rand Type "XPV" Steam Driven Compressor

The Type "XR" has D steam valves on small sizes and Meyer Adjustable Cut-Off type on larger units.

The Type "XPV" has automatic cut-off governor and balanced piston steam valve and is suitable for high steam pressures and superheat. Bulletin 3044 covers "XPV". Full information on "XR" on request.

***DATA ON TWO-STAGE, SEA LEVEL "XPV" COMPRESSOR**

Piston Displacement, Cu. Ft. Free Air Per Minute	I.H.P. in Steam Cylinders 80 lbs.	90 lbs.	100 lbs.	110 lbs.	Overall Dimensions Feet and Inches Length	Width
246	37	40	41	43	6-8	5-5
312	62	65	69	72	1-9	6-10
349	85	89	92	96	11-5	6-4
823	126	132	138	144	13-3	7-10
1158	178	185	194	203	15-2	8-8
1466	211	222	232	241	15-6	9-2
1723	262	276	288	299	18-5	10-4
2200	332	349	366	379	18-11	10-11
3026	457	479	502	521	23-4	15-6
4170	618	649	680	705	27-1	17-6

*Data on Single-Stage and Altitude Machines on Request

Class "ER-1" Belt-Driven Compressors

Single-stage, double-acting, straight-line compressors of enclosed construction arranged for belt drive. Running parts and the adjustable removable main bearings of genuine babbitt are lubricated by an automatic flood system. The inlet and discharge valves are of the Ingersoll-Rand Plate Type. Reliable regulators, automatically loading and unloading the compressor can be supplied for all sizes. These compressors can also be furnished with the short belt drive and suitable motor and control to suit any electric current condition, or with tight and loose pulleys for shaft drive. Bulletin 3050.

Ingersoll-Rand Class "ER" Short Belted Electric Motor Driven Compressor

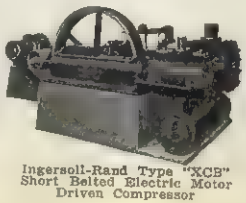
***DATA ON CLASS "ER-1" SINGLE-STAGE COMPRESSOR**

Piston displac., cu ft. per min	Air Pressure Designed for Lbs. Gauge Min.	Air Pressure Designed for Lbs. Gauge Max.	Speed R.P.M	B.H.P. inc. belt loss Min	B.H.P. inc. belt loss Max.	Floor Space Feet and Inches Length	Width
38	100	150	500	4	4.3	4-9	1-6
44	20	100	500	3.8	6.5	4-1	1-6
44	100	150	400	6.5	7	5-1	1-9½
64	45	100	400	7.2	9	5-4	1-9½
67	100	140	350	8.7	10	6-6	1-11
92	45	100	350	11	13	6-7	1-11
136	100	130	300	25	27	7-11	2-6¾
173	65	100	300	26	29	8-1	2-6¾
246	100	120	275	41	44	9-9	3-2½
325	50	100	275	48	65	9-5	3-2½
386	100	115	250	62	66	11-0	4-1¾
528	45	100	250	66	89	11-2	4-1¾

*Data on standard machines for low pressures on request.

Type "XCB" Belt-Driven Compressors

Duplex construction, single or two-stage, with 5-Step Clearance Control automatically unloading or loading compressor in five steps, viz.: full, three-quarter, one-half, one-quarter and no load. These compressors are dust-proof, enclosed construction, automatic flood lubrication for moving parts and force feed lubrication



Ingersoll-Rand Type "XCB" Short Belted Electric Motor Driven Compressor

for air cylinder. The air valves are of the Ingersoll-Rand Plate Type. Can also be furnished with the short belt drive and suitable motor and control to suit any electric current conditions. Bulletin 3142.

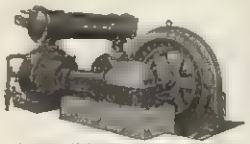
*DATA ON TWO-STAGE, SEA LEVEL "XCE" COMPRESSOR

Piston Displac., Cu. Ft. of Free Air Per Minute	Brake Horse-Power Required at Belt Wheel of Compressor — Air Pressure		Over-All Dimensions Feet and Inches	
	80 lbs	100 lbs.	Length	Width
6[illegible]	96	107	10-7	6 -
85[illegible]	134	147	11-9	[illegible]
106[illegible]	172	188	12-6	[illegible]
124[illegible]	199	210	13-	[illegible]
140[illegible]	233	256	13-3	[illegible]

*Data on Single-Stage and Altitude Machines on Request.

Class "XRE" and "PRE" Direct-Connected Electric Driven Compressors

Duplex construction, single or two-stage, direct-connected motor driven, the rotor of the motor being securely pressed and keyed on the compressor shaft, dust-proof enclosed construction, automatic lubrication. Ingersoll-Rand Plate Inlet and Discharge Valves. This compressor has I-R Patented 5-Step Clearance Control, automatically unloading or loading the compressor in five steps, viz.: full, three-quarter, one-half, one-quarter and no load. Bulletin 3226.



Ingersoll-Rand [illegible] Type [illegible] Direct-Connected Electric Driven Compressor

*DATA ON TWO-STAGE, SEA LEVEL "XRE" AND "PRE" COMPRESSORS

Piston displace., cu. ft. per min	Motor b. h. p. at air pressures given		Floor space Ft. and In
	90 lbs.	100 lbs.	
627	100	105	10-[illegible] x 10-3
1052	169	177	11-1 x 12-1
1302	201	210	12-0 x 11-9
1574	251	264	14-0 x 13-0
2023	309	324	15-0 x 15-6
2874	456	478	17-0 x 17-3
3884	625	656	18-4 x 19-0
5011	752	787	21-3 x 19-6
6867	972	1020	28-6 x 20-6
7440	1120	1179	31-9 x 24-3

*Data on Single Stage and Altitude Machines on Request

Ingersoll-Rand Turbo Blowers and Compressors

I-R Turbo Blowers for low and medium discharge pressures are available for pressures of one to 30 pounds per square inch in sizes ranging from 3000 to 80,000 cubic feet of free air per minute. These blowers are used for the following services: iron blast furnaces, Bessemer converters, copper blast furnaces, copper converters, copper flotation, lead furnaces, foundry cupolas, exhausting coke oven gas, exhausting illuminating gas, boosting illuminating gas, operating water gas sets, atomizing fuel oil for oil burners and activated sludge sewage disposal.

Ingersoll-Rand Turbo Blower

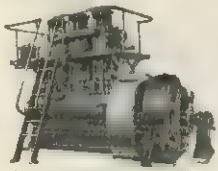
I-R Turbo Compressors are available for compressing air to a discharge pressure of 90 to 110 pounds per square inch gauge in sizes ranging from 2,500 to 10,000 cubic feet of free air per minute. Full information on request.

Ingersoll-Rand Type "PO" Oil Engine

Ingersoll-Rand Oil Engines

Ingersoll-Rand Type "PO" Oil Engines are of the horizontal, single-cylinder, single-acting, direct-injection type operating on the four-stroke cycle and available in 50, 100 and 150 B. H. P. sizes.

Ingersoll-Rand Type "PR" Oil Engines are of the vertical, three or more cylinders, single-acting, direct-injecting type operating on the four-stroke cycle and available in from 105 to 1,000 B. H. P. sizes.



Ingersoll-Rand Type "PR" Vertical Oil Engine

The outstanding feature of design is the combustion chamber, and the opposed spray nozzles used for the direct injection of fuel. Complete atomization of fuel is obtained without the use of high pressure air, and ignition is at all times by heat of compression only. Ingersoll-Rand Oil Engines operate at full Diesel economy, and burn any oil successfully used in any air-injection Diesel engine.

Steam Condensing Plants

The Company is prepared to furnish a suitable condenser for all condensing problems and service conditions. Its line includes the Surface (Bulletin 9035), Barometric (Bulletin 9224), and Low-Level Multi-Jet Condensers (Bulletin 9032), together with the Steam Jet Vacuum Pumps.

Ingersoll-Rand Surface Condensing Plants

Ingersoll-Rand Surface Condensing Plants consist of a Surface Condenser, Cameron Centrifugal Circulating and Condensate Pumps, and I-R Vacuum Pump equipment.

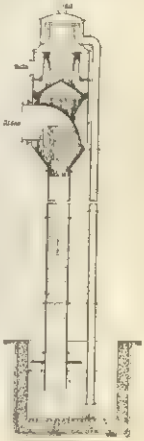
Ingersoll-Rand Surface Condenser

I-R Surface Condensers are of highly improved design and have many important features not found in other condensers of this type. The I-R Condensers have greatly reduced tube surface. Elimination of waste tubes is secured by arranging tubes in stages and by the use of a separate devaporizer or cooler. The condenser has a heart-shaped shell. Tubes are spaced on wide centers at the top of the shell and brought closer together in each lower bank or stage. This construction compensates for the decreased volume of the steam as it is condensed in its passage down over the tubes, and sufficiently high steam velocities to sweep condensate and air films from the tubes are maintained throughout the condenser.

Ingersoll-Rand Barometric Condensing Plants

Ingersoll-Rand Barometric Condensing Plants consist of a Barometric Counter-Current Condenser, I-R Vacuum Pump equipment and Cameron high efficiency centrifugal water pumps.

The condenser is of the barometric or high level construction which results in the following advantages: A counter-current construction insuring small terminal temperature difference between steam and hot water, and at the same time cold air temperature insuring the most effective air removal. Less water used than with any other type, resulting in a great power saving in operating auxiliaries. Specially adapted to fluctuating loads; greater stability; better vacuum obtained, or higher average operating efficiency with varying load conditions. Greater flexibility, water and vacuum pumps are independent and can be regulated to suit varying water temperatures and conditions. Permit the use of dirty, gritty or acid circulating water continuously without cleaning or repair.



Ingersoll-Rand Barometric Condenser

Worthington Pump and Machinery Corporation

Executive Offices

115 Broadway, NEW YORK

Works

Worthington Works.....Harrison, N. J.
Blake & Knowles Works.....East Cambridge, Mass.

Works

Deane Works.....Holyoke, Mass.
Laidlaw Works.....Cincinnati, O.
Snow-Holly Works.....Buffalo, N. Y.

Branch Offices

ATLANTA, GA.....435 Trust Co. of Georgia Bldg.
BIRMINGHAM, ALA...American Trust & Savings Bank Bldg.
BOSTON, MASS.....466 Massachusetts Trust Bldg.
BUFFALO, N. Y.....707 Iroquois Bldg.
CHICAGO, ILL.....620 Old Colony Bldg.
CINCINNATI, OHIO.....1503 First National Bank Bldg.
CLEVELAND, OHIO.....304 Rockefeller Bldg.
DENVER, COLO.....435 Seventeenth Street
DETROIT, MICH.....839 Majestic Bldg.
EL PASO, TEXAS.....510 Mills Bldg.
HOUSTON, TEXAS.....423 Southern Pacific Bldg.
KANSAS CITY, MO.....828 Scarritt Bldg.
LOS ANGELES, CAL.....2424 Enterprise St.
MEXICO CITY, MEXICO.....P. O. Box 5260
NEW ORLEANS, LA.....533 Baronne Street
PHILADELPHIA, PA.....1516 North American Bldg.
PITTSBURGH, PA.....407 Oliver Bldg.
ST. LOUIS, MO.....701 Laclede Gas Bldg.
ST. PAUL, MINN.....1017 Commerce Bldg.
SALT LAKE CITY, UTAH.....1610 Walker Bank Bldg.
SAN FRANCISCO, CAL.....306 Sharon Bldg.
SEATTLE, WASH.....203 Maynard Bldg.
TULSA, OKLA.....424 North Boulder St.
WASHINGTON, D. C.....426 Homer Bldg
LONDON, ENGLAND.....Queen's House, Kingsway
PARIS, FRANCE.....1 Rue des Italiens

Larger Plants, Larger Facilities and Larger Production Than Any Other Pump Manufacturer in the World

Vertical Air Compressors

Completely enclosed, self-oiling, with single acting FEATHER (Reg. U. S. Pat. Off.) valve air cylinder. Operates quietly.

With Idler for Short Belt Drive

TABLE OF SIZES AND DATA

Diameter of Cylinder	Stroke	Maximum Rating: Displacement Cu. Ft. per Minute	Maximum Rating: Revolutions per Minute	H. P. of Motor: At 100 Lbs.	H. P. of Motor: At 150 Lbs.	Pulley: Diameter	Pulley: Face	Floor Space: Length	Floor Space: Width	Floor Space: Height	Openings: Inlet	Openings: Outlet
2⅜	3	5 2	600	1	1	12	2¼	12	12	19	¾	¾
3½	4	12 2	550	2½	2¾	16	3¼	16	16	25	1¼	1¼
4½	6	23	500	4½	5	20	4½	20	20	31	1½	1½
6	6	44	450	9½	11	24	5¾	24	24	40	2	2

Single Belt Driven Compressors

Single Worthington FEATHER (Reg. U. S. Pat. Off.) Valve Compressor Arranged for Close Belt Electric Drive.

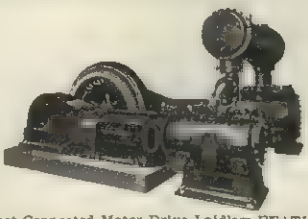
Single Steam Driven Compressors

Made with same size air cylinders as the single belt driven and with ratings very much the same. In some cases speed varies a little from the belted style, thus varying the capacity, but these differences are slight.

TABLE OF SIZES AND DATA

Steam Cylinder	Air Cylinder	Stroke	Air Pressure in Pounds per Square Inch	Displacement Cubic Feet per Minute	Revolutions per Minute	Floor Space: Length	Floor Space: Width
7	7⅛	6	80-125	106	350	5′ 10″	2′ 3″
8	8⅛	9	80-125	170	300	9′ 0″	2′ 9″
9	10	10	80-110	245	275	11′ 4″	3′ 3″
10	11	12	80-100	336	260	12′ 8″	3′ 10″
7	8½	6	40- 60	136	350	7′ 2″	2′ 3″
8	10	9	40- 60	245	300	9′ 3″	2′ 9″
9	11	10	40- 60	300	275	11′ 9″	3′ 3″
10	13	12	40- 60	475	260	12′ 10″	3′ 10″
8	12	9	20- 30	335	300	9′ 3″	2′ 9″
9	13	10	20- 30	418	275	12′ 0″	3′ 3″
10	15	12	20- 30	632	260	13′ 0″	3′ 10″

Large Steam and Electric Driven Air Compressors



Direct Connected Motor Drive Laidlaw FEATHER (Reg. U. S. Pat. Off.) Valve Air Compressors

Besides the single cylinder machines mentioned, Worthington builds duplex single and two stage compressors, both steam and motor driven. Capacities up to 5000 cu. ft. per minute.

Condensing Apparatus

Bulletin W-701 describes the line of Worthington condensing apparatus in detail and gives some valuable information on the subject of condensation. The illustrations shown here are taken from that bulletin.

COLDWELL LAWN MOWERS

IMPROVED CADET—ADJUSTABLE BRONZE BEARING

Three Blades—Drive Wheels, 8 Inches
Finish, Green and Black

Internal direct drive gear; adjustable split brass bearings; 5-inch revolving cutter.

Width of Cut	Wgt. Each	EACH
12 in.	35 lbs.	$10.50
14 in.	37 lbs.	11.25
16 in.	39 lbs.	12.00

This is a good Lawn Mower at a medium price, and gives the purchaser full value for his money. It has brass bushings and the same ratchets and adjustments that are used on many of the high grade mowers. The gears are fine cut, and it is in every respect what is needed at the present time, viz., a mower that will give good service and at a low cost.

IMPROVED JEWEL—ADJUSTABLE BRONZE BEARING

Four Blades—Drive Wheels, 8 Inches
Finish, Aluminum and Red, with Gilt Trimmings

Adjustable split bronze bearings; 5-in. revolving cutter; double ratchet and fine cut gears.

Width of Cut	Wgt. Each	EACH
12 in.	35 lbs	$11 75
14 in.	37 lbs	12 50
16 in.	39 lbs.	13 25

This is the best Lawn Mower ever offered at the price. It has large driving wheels, insuring lightness of draught, and four blades in the revolving cutter, giving fineness of cut. The bottom knife is made of hardened and tempered crucible steel It has a double ratchet and fine cut gears, which do away with the noise usually found in cheap lawn mowers. The bearings are provided with split brass bushings, by means of which all wear can be taken up. The workmanship and finish on this mower is unsurpassed

All above one in a box, handles separate

Four Blades—Drive Wheels, 9 inches
Finish, Aluminum and Red, with Gilt Trimmings
5-Inch Revolving Cutter

GREENWOOD—ADJUSTABLE BRONZE BEARING

Three Blades
Drive Wheels, 9 Inches

Width of Cut	Wgt. Each	EACH
12 in.	35 lbs.	$13.00
14 in.	37 lbs.	13.50
16 in.	39 lbs.	14.00

This machine was designed to meet all the severe conditions which are sometimes imposed upon a mower of this grade and give the purchaser service and satisfaction. It is made with adjustable brass bushed journals. The teeth of the gears are of the right shape, ratio and pitch and are cut much finer than those used in a mower of this grade, which insures a quiet running machine. The knives are full-sized and heavy and will not spring out of line when something of a hard nature enters between them while mowing. The bottom knife is adjusted to the revolving cutter by steel set screws, which are tightly fitted and will not jar loose.

The ratchet is the well known flat steel sliding-pawl. The mower is well made throughout and of good material and is the result of an insistent demand for a mower of the open frame construction at a low price which will give the user service and satisfaction.

COLONIAL—BALL BEARING

Four Blades—Drive Wheels, 8 Inches
Finish, Aluminum and Red, with Gilt Trimmings

Width of Cut	Wgt. Each	EACH
12 in.	38 lbs.	$14 50
14 in.	40 lbs.	15.25
16 in.	45 lbs.	16 00

This Mower is made to meet the demand for a first-class ball bearing machine which can be purchased at a price within reach of all. It is made throughout of best grade material, and the workmanship is unsurpassed. The driving wheels are 8 inches in diameter and the revolving cutter has four blades, which insure fineness and evenness of cut. It has sliding-pawl ratchets and the adjustments of both bearings and bottom knife are the simplest and most effective ever made. One screw only is required to adjust the bearings, by means of which all looseness in the revolving cutter bearings can be taken up, and a locking screw holds them securely in place

All above one in a box, handles separate.

LAKEWOOD—BALL BEARING

Width of Cut	Wgt. Each	EACH
14 in.	50 lbs.	$16 75
16 in.	55 lbs.	17 50
18 in.	60 lbs.	18.25

One in a box, handles separate

The Lakewood is equipped with patent adjustable ball bearings, the adjustment of which is accomplished by means of a single screw. They are also provided with a locking screw which holds them securely in place.

The bottom knife is made of the best tool steel, and all other material entering into its construction is the same as that used in many high grade mowers.

COLDWELL LAWN MOWERS

AMBASSADOR—BALL BEARING

Five Blades—Drive Wheels, 10 inches
6-in. Revolving Cutter

Width of Cut	Wgt. Each	EACH
14 in.	60 lbs.	$19 75
16 in.	65 lbs	21.25
18 in.	70 lbs.	22 75

One in a box, handles separate

A high grade mower, open frame type. The workmanship and material is of the very best. All running parts have been carefully machined and a second cut made on each operation to secure accuracy

Gears are raised up from ground and completely housed to prevent grass or dust from entering and clogging them.

The revolving cutter is carried on patented ball bearings, which are adjusted by a single screw. The bottom knife is of cast steel, oil tempered. The ratchet has flat steel pawls

IMPERIAL HIGH WHEEL—HYATT ROLLER BEARING

Five Blades—Drive Wheels, 10 inches
Finish, White and Red, with Gold Trimmings

Coldwell patent split adjustable brass hangers; 6-in. revolving cutter; triple-pawl ratchet in each wheel.

Width of Cut	Wgt. Each	EACH
14 in.	60 lbs.	$26 00
16 in.	65 lbs.	28 00
18 in.	70 lbs.	30.00
20 in.	80 lbs.	32 00

One in a box, handles separate

The Imperial Mower is guaranteed to be the best made. Its principal features are in the construction, one of them being that the bottom knife bar is securely bolted to the side frames and is not adjusted as in other lawn mowers.

The knives are adjusted by means of a new patent hanger, so constructed with an adjustable brass bushing that all wear can be taken up in the bearings. This hanger raises and lowers the revolving cutter and a positive locking device holds the knives securely in adjustment.

These mowers are equipped with a triple-pawl ratchet in each wheel, which guarantees long life to this part of mower.

In the Imperial the gears are fine cut, thus insuring quietness. They will outwear those in any other mower, as the construction of this machine does not permit of them running when the mower is being run backward. These lown mowers are especially constructed for mowing terraces. They can be sharpened in a few minutes without removing any parts.

LAWN TRIMMERS

COLDWELL—BALL BEARING

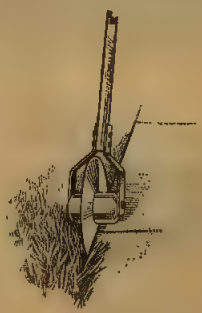
Four Blades—Drive Wheel, 8 inches

No. 4-L/T—Width of cut, 8 in. Wgt. each, 36 lbs.. Each $16.50

One in a box, handles separate.

Coldwell's Lawn Edger has in its construction several noteworthy features, the principal of which is the ball-bearing adjustments. The adjustment of the bearings is accomplished by means of a single screw, a locking screw holding them securely in place. The large diameter drive wheel, together with the large diameter revolving cutter, cause it to run particularly easy and prevent it from choking when cutting high grass. It is equipped with fine gears, sliding-pawl ratchet, and the best tool steel bottom knife.

LAWN EDGE TRIMMER



Pines

Cutting knife is 6 inches in diameter and made of highest quality saw steel. The rollers are of hard maple

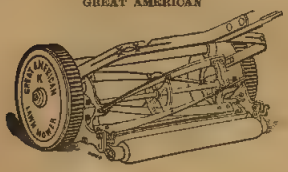
Pines—Length over all, 49 in. Weight dozen, 36 lbs.

Dozen $18 00

One in a carton.

LAWN MOWERS

GREAT AMERICAN



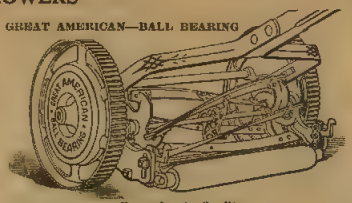
Width of Cut	Blades	Wgt. Ea.	EACH
14 in.	4	48 lbs.	$28 00
16 in.	4	51 lbs.	32 00
18 in.	4	54 lbs.	36.00

One in a box, handles separate.

Blades—Crucible tool steel, oil hardened and water tempered.
Gears—Double. One in each wheel.
Bearings—Parallel. Machined for accuracy. Adjustable to take up wear.
Wheels—7 inches. Closed pattern.
Parts—Malleable and cast, accurately machined to insure noiseless service.
Bottom Knife—Self-sharpening Spring steel.
Height of Cut—⅜ to 1½ inches Will cut grass 6 inches high.
Handle Hard wood.

A standard type lawn mower that will give good service and satisfaction on any kind of a lawn. Strong, durable and easy running. A favorite with the professional gardener, as well as the amateur

GREAT AMERICAN—BALL BEARING



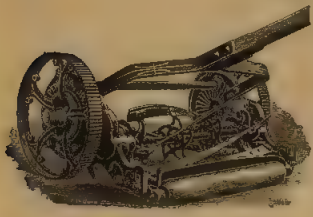
Pennsylvania Quality

Width of Cut	Wgt. Each	EACH
15 in.	66 lbs.	$30.00
17 in.	67 lbs.	34.00
19 in.	70 lbs.	38.00
21 in.	76 lbs.	42.00

One in a box, handles separate.

Blades—Crucible tool steel, oil hardened and water tempered
Gears—Double. One in each drive wheel. Cone and cups, hardened tool steel Extra large balls of highest quality
Wheels—10 inches. Solid-center, protecting gears. Six spokes.
Parts—Malleable and cast, accurately machined to insure noiseless service.
Bottom Knife—Self-sharpening, raised edge Crucible tool steel, insuring long service
Height of Cut—⅜ to 1½ inches Will cut grass 6 inches high.
Handle—Hard wood. Iron braces on cross bar.
The Great American Ball Bearing is the best all-around mower of its type in the world. The perfectly-fitting ball cups and cones insure an easy running machine.

PENNSYLVANIA JUNIOR—BALL BEARING



Blades—Five crucible tool steel, oil hardened, water tempered, extra wide.
Gears—A triple set on each side. **Wheels**—Open spokes
Wheel Base—Extra long, cuts smoothly over uneven ground.
Bottom Knife—Raised edge of tempered, crucible tool steel.
Height of Cut—¼ to 1 5-16 inch. Will cut grass 6 inches high.
Parts Malleable and cast, machined on jigs to insure accuracy, noiseless service.
Stayrite Handle—Hard wood. Adjustable steel clamps on cross bar.

The **PENNSYLVANIA JR.** has all the good points of the **Pennsylvania** line, with the addition of some features that make it the most perfect grass cutter in the world The triple set of gears (train of gears) insures more smooth running and cutting also over uneven ground because of the longer wheel base Its self-sharpening features alone make it worth its cost to the user, as it will save this expense until the blades are worn out—in average use a dozen years or more.

HIGH WHEEL

10-in. Wheels—6-in. 5-Blade Cyl.

Width of Cut	Wgt. Boxed Inc Handle	EACH
15 in.	71 lbs.	$30 00
17 in.	74 lbs	34 00
19 in.	77 lbs	38.00
21 in.	80 lbs.	42 00

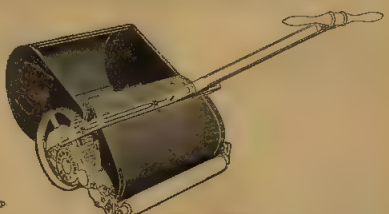
LOW WHEEL

8-in. Wheels—6¼-in. 5-Blade Cyl.

Width of Cut	Wgt. Boxed Inc. Handle	EACH
12 in.	59 lbs.	$24.00
14 in.	62 lbs	28.00
16 in.	65 lbs	32.00
18 in.	68 lbs	36.00

PENNSYLVANIA GOLF—BALL BEARING—WITH GRASS CATCHER

(View Without Grass Catcher)



Blades—Crucible tool steel, oil hardened and water tempered.
Gears—Double train of cut gears
Wheel Base—Extra length Will run smoothly and not tip up
Wheels—9½ inches. Open spokes
Bottom Knife—Raised edge of tempered crucible tool steel
Height of Cut—3-16 to 1 3-16 inches.

The **Pennsylvania Golf** is especially adapted for golf links, tennis courts, bowling greens and cricket grasses. Can be adjusted to cut 3-16 of an inch, practically shaving the lawn. The iron roller shown in illustration is regularly supplied with the ball bearing high wheel pattern only

The roller brackets and cylinder bearings fitted with oil cups.

The grass catcher is made of sheet metal, with woody ends. It consists of two parts, the box or catcher and the shield or deflector Easily detached.

HIGH WHEEL

Ball Bearing—Seven Blades—Iron Roller—9¼-in. Wheels

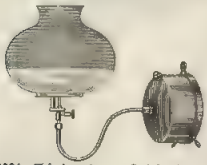
6½-in. Cylinder

Width of Cut—Inches	17	19
Weight, boxed, including handle, lbs.	100	103
Wgt. grass catcher (boxed separately), lbs.	31	33
Each (with grass catcher)	$42.00	$46.00

Coleman Quick-Lite Lamps and Supplies

COLEMAN QUICK-LITE BRACKET LAMPS

WITH THREE-QUARTER FROSTED GLOBE



No. B321—This is a Quick-Lite Wall Lamp for use over desks, in bath rooms, kitchens or rooms with low ceilings. Can be used as a table lamp. One in carton complete with three-quarter frosted globe, 2 mantles, pump, wrench, cleaning pick and extra generator. Shipping weight, 13½ lbs. .....Each, $14.00

WITH OPAL PANELED SHADE

No. B329—This is a Quick-Lite Wall Lamp for use over desks, in bath rooms, kitchens or rooms with low ceilings. Can also be used as a table lamp. One in carton complete with a No. 329 shade, mantles, pump, wrench, pick and extra generator. Shipping weight, 15 lbs. . . .Each, $13.50

COLEMAN QUICK-LITE CHANDELIERS

WITH THREE-QUARTER FROSTED GLOBES

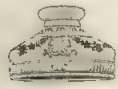
No. P321 A Quick-Lite Chandelier that is just the thing for use in large rooms, schools, halls, churches and stores. Has three-quarter frosted, bug-proof globes. One in carton complete with globes, 4 mantles, pump, wrench, cleaning pick and two extra generators. Shipping weight, 20 lbs. .....Each, $25 00

WITH OPAL PANELED SHADES

No. P329—A Quick-Lite Chandelier that is just the thing for use in large rooms, schools, halls, churches, stores. Lights with matches. Is fitted with same shades as the C329 Lamp. One in carton complete with shades, 4 mantles, pump, wrench, pick and two extra generators. Shipping weight, 16½ lbs.....Each, $24 00

SHADES

No. 329—Opal panel style, designed especially for Quick Lite. It is artistic and durable; a splendid value .....Each, $ 2.00



No. 318—A handsome shade decorated in tints of tan with wild rose clusters .....Each, $ 3.30

No. 324—Same as No. 318, except it has green tints.....Each, $ 3.30

SHADES

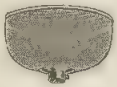
No. 335A—Beautiful fringed shade with decorative reliefs and tinted in green.....Each, $ 5.90

No. 335D—Same as 335A except it is tinted in tan and overlaid with clusters of foliage and pink wild-flowers .....Each, $ 6.40

SHADES

No. 317—Crystal shade full frosted and ornamented with imported crystal beaded fringe.....Each, $ 4.00

No. 334—White enameled steel shade that can't be broken by any sort of rough handling. Made to fit any Quick-Lite Lamp. . . .Each, $ 4.00

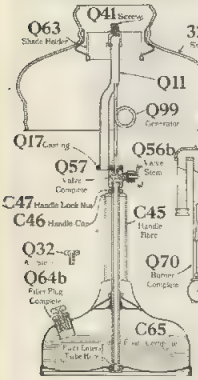


No. 333—White asbestos coated wire bug screen for Nos. CQ329, CQ317B, CQ318 and CQ324 Quick Lite Lamps .....Each, $ 1.50

No. 310Q—Wire Globe Protects mantles from bugs. Has polished metal collar .....Each, $ 0 80

No. 327—Mica chimney for No. 1327 Lantern ..... Each, $ 1.00

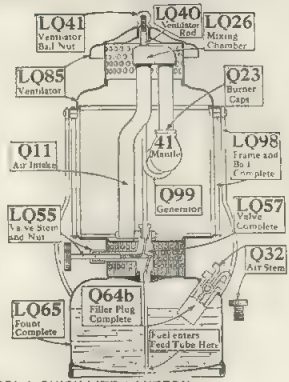
Coleman Quick-Lite Repairs and Supplies



Parts listed as "Q" are interchangeable on CQ, BQ or PQ Quick-Lite Lamps.

No. Q70 Quick-Lite Burner

No Q99 Quick-Lite Generator



MODEL C QUICK-LITE LAMP

C5	Finishing Shell	$0.50
Q11	Burner Support Tube only	.60
Q17	Burner Support Casting	20
Q18	Gas Tips	10
Q23	Burner Cap Complete	30
Q24	Burner Tube	20
Q25	Burner Cap Screen, 2 for	10
Q26	Mixing Chamber	80
Q32	Air Stem	30
Q36	Lead Gaskets, 2 for	10
Q41	Shade Holder Screw	.10
C45	Handle	40
C45	Handle Complete	60
C46	Fiber Handle Cap	.10
C47	Handle Lock Nut	10
Q56b	Valve Stem and Nut	40
Q57	Valve Complete	1 00
Q63	Universal Shade Holder	40
Q64b	Filler Plug Complete	.80
C65	Fount with Filler Plug	7.50
C69	Hanger	10
Q70	Burner, Generator and Valve Assembled	4 10
Q99	Generator Complete	.50
Q	Wrench	30
Q	Pump for all Portable Lamps and Lanterns	1.00
Q	Tip Wrench	.10
Q	Tip Cleaning Needle	.10

MODEL L QUICK-LITE LANTERN

Burner and Generator Parts Same as C Lamps

Q11	Burner Support Tube	$0.60
LQ19	Burner Frame Washer	10
Q32	Air Stem	30
Q36	Lead Gasket, 2 for	10
LQ40	Ventilator Rod	.10
LQ41	Ventilator Ball Nut	10
LQ55	Valve Stem and Nut	40
LQ57	Valve Complete	1 00
Q64b	Filler Plug Complete	80
LQ65	Fount with Filler Plug	6 00
LQ70	Complete Burner, Valve and Generator	3 50
LQ85	Ventilator	2 40
LQ98	Globe Base Rest	60
LQ98	Frame and Ball Complete	1 60
LQ	Wrench	.30

MODEL P CHANDELIER

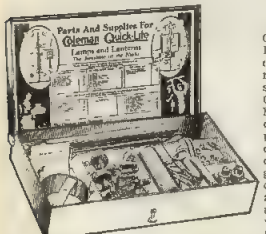
Refer to Model C Lamp for Valve, Generators and Burner Parts for Chandelier and Bracket Lamps.

Q36	Lead Gaskets, 2 for	$0.10
Q64b	Filler Plug Complete	.80
P65	Fount with Filler Plug	10.00
P74	Arms and Connections Complete	4.00
Q	Wrench	.30

MODEL B BRACKET LAMP

Q36	Lead Gaskets, 2 for	$0.10
B42	Hanger Ring for Fount	.20
Q 64b	Filler Plug Complete	.80
B65	Fount with Filler Plug	8.00
Q	Wrench	.30

QUICK-LITE COUNTER DISPLAY CASE



This new Coleman Quick Lite Metal Counter Display Case gives the dealer the proper assortment of all parts and supplies needed by Quick Lite users. It saves handling many small orders for only a few parts at a time. The lid card lists all the parts contained in the case together with prices. The card is printed in purple and orange and makes an attractive display when the tray is open on the counter.

No. S - Quick Lite Supply Case, complete with assortment, weight 8 lbs., list price, ... Each, $30.00
No. J - Supply Case only, weight 2½ lbs., list price, Each, $ 3 00

COLEMAN RAG MANTLES

Coleman Mantles are made with a reinforced bottom to resist wear where the pressure is greatest. They are made from Egyptian long fiber thread, highly solutioned with best grades of necessary chemicals.

Each gross of Coleman Junior Mantles comes packed in a counter display carton, attractively printed in purple and orange. Each dozen mantles is packed in a special paraffined box that keeps them fresh and clean.

Nos.	41	40
Type	Junior	Senior
Length, inches	2½	4
Per Dozen	$ 1.50	$ 2 20
Per Gross	16.00	23 00
Per 4 Gross Lot (576)	60.00	
Per 7 Gross Lot (1008)	98.00	150 00

LANTERNS

SUPREME LANTERNS

Two-piece Stamped Tubes. Oil Fount is Drawn in One Piece; Bottom Double Seamed to Fount. Will Burn Twenty-four to Forty-eight Hours When Filled; Absolutely Wind-proof; Side Lifts.

Nos. 160 and 162

SUPREME SHORT GLOBE COLD BLAST LANTERNS

Made of heavy tin plate, retinned with special globe lift and heavy rising cone tinned burner. Extra large oil hole with brass screw cap, set at an angle for easy filling. Large tinned bail will remain upright when desired. Large fount.

No. 160—No. 2 Cold Blast, 1-inch wick, standard short globe, height 14 inches; burns 35 hours; weight per dozen 37 lbs. . . . . Per Dozen, $24 00

No. 162—Same as No. 160, with large fount; burns 48 hours; weight per dozen, 48 lbs. . . . . Per Dozen, 26.00

Half dozen in a case.

COLD BLAST

Nos. 240 and 242

No. 240—No. 2 Cold Blast burner, 1-inch wick, No. 0 Cold Blast globe, retinned; will burn 35 hours when filled; weight per dozen, 40 lbs Per Dozen, $24.00

No. 242—Same as No. 240, except has extra large oil fount which will burn 48 hours when filled; weight per dozen, 50 lbs. . . . . Per Dozen, $26 00

COLD BLAST DASH

No 166

No. 166—Dash Lantern; Cold Blast, 1-inch wick, with standard short Cold Blast Bull's-eye globe, with bottom lift and dash attachment; weight per dozen, 48 lbs. . . . . Per Dozen, $34 00

HOT BLAST

Nos. 210 and 211

No. 210—No. 1 Hot Blast burner, ⅝-inch wick, No 0 plain globe, retinned; burns 30 hours, weight per dozen, 30 lbs. . . . . Per Dozen, $15 00

No. 211—Same as No. 210, except with ruby globe, weight per dozen, 30 lbs. . . . . Per Dozen, $19.20

Half dozen in a case.

LITTLE SUPREME

No. 150

No. 150—Little Supreme. Bright tin. No. O C. B. burner, ⅝ inch wick, junior short globe; height 11⅝ inches. Burns 30 hours. Packed one dozen in a case. Weight 25 pounds. . . . . Per Dozen, $16.00

Half dozen in a case

DIETZ SWITCHMAN'S

"X. L. C. R."

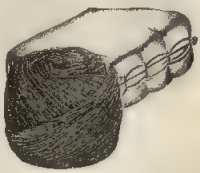
DIETZ "XLCR"—A sturdy, lightweight switchman's lantern, perfectly balanced for signaling and dependable in lighting power in any kind of weather. The bail locks upright and has a comfortable fibre-unsulated hand-grip The oil-pot is held in place by two re-inforced springs. Made of bright tinned steel redipped. Height over all, 9 inches, burns signal oil, will burn for 24 hours on one filling; hinged top, 1-inch wick, No. 1 burner, Vulcan globe Weight per dozen, 27 pounds. . . . Per Dozen, $50 00

SUPREME ELECTRIC LANTERN

No 100

For Prices, See Electrical Division. Refer to Index

MINERS' WICKING.



No. 2M 2-oz Balls, medium, cotton . . . . . Per Pound, $1 00

Five pounds in a sack.

COMMUNITY PLATE
TEASPOON
DESSERT SPOON
DINNER KNIFE
DINNER FORK
TABLE SPOON
ADAM DESIGN
BRIGHT FINISH
SPOONS Six in Box
KNIVES (Plated Blades)
Six in Blue Velvet Lined Gift Box
FORKS Six in Box
Hollow Handle Dinner
Hollow Handle Dessert
Modeled Handle
18 lb

COMMUNITY PLATE

ADAM

SUGAR SPOON *each* $1.57

BUTTER KNIFE..... *each* $1.57

BUTTER KNIFE AND SUGAR SPOON, *set* $3.12

LARGE COLD MEAT FORK *each* $2.77
SMALL COLD MEAT OR SARDINE FORK *each* 2.15
For serving cured food, cold meat, fish and salad

LARGE BERRY OR SERVING SPOON *each* $3.08
SMALL BERRY OR PRESERVE SPOON *each* 1.97
For serving from casserole or baking dish

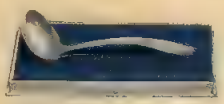
INDIVIDUAL BUTTER SPREADERS, *set* $7.38
Used with Individual Bread and Butter Plates.

DESIGN

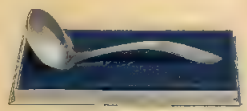
BENT HANDLE BABY SPOON *each* $1.25
STRAIGHT HANDLE BABY SPOON *each* 1.25

BABY FORK *each* $1.25

BENT HANDLE SPOON AND STRAIGHT FORK, *set* $2.50
STRAIGHT HANDLE SPOON AND FORK, *set* $2.50



SALAD DRESSING OR CREAM LADLE, *each* $2.46
For serving salad dressing, whipped cream



SERVING OR GRAVY LADLE *each* $3.07
MEDIUM SOUP LADLE *each* 9.22

ORANGE OR GRAPE FRUIT SPOONS, *set* $6.76
For oranges, grapefruit or melons.

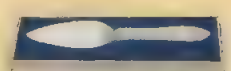
COMMUNITY PLATE

Ice Cream or Sundae Spoons ... Each $0.7[illegible]
Jam or Conserve Spoon ... Each $1.5[illegible]

Pickle or Olive Fork ... Each $1.80

Iced Tea or Iced Drink Spoons ... $7.[illegible]

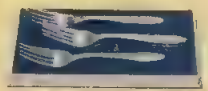
Pierced S[illegible] ... [illegible] $[illegible]
Correct Service for Tomatoes, Cucumbers, etc



Cheese Server ... [illegible] $[illegible]

Pierced Pastry Server ..... *Each* $4.90
Correct Service for Cake, Pie, Pastry, etc.

STAINLESS CARVING SETS
2 Piece Hollow Handle ..... *Per Set* $10.20
2 Pi[illegible] Molded Handles ... *Per Set* $8.2[illegible]
For Steak, Game, ...



In[illegible] Pastry [illegible] $5.[illegible]

Ol[illegible] ... $2.11

Oyster or Seafood Forks. *Set* $6.04
Also Correct Service for Fruit Cocktail

CHILD'S SETS
With Hollow Handle Knife ... *Set* $4.90
With Flat Handle Knife ... *Set* $3.[illegible]

Pie or Ice Cream Server ..... *Each* $5.28

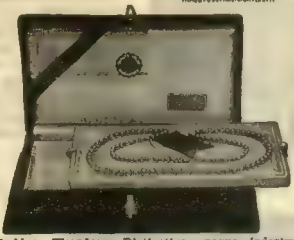
Cake Serving Set ... $[illegible]
Cake Fork ... [illegible] $3.0[illegible]
Cake or Bread Knife ... *Each* $2.75

STAINLESS CARVING SETS
3-Piece Hollow Handle ... *Per Set* $20.40
For Large Roasts, Fowl, etc.

CORRECT SERVICE PIECES

Deltah Pearls are admittedly the greatest value obtainable in fine, guaranteed, advertised pearl necklaces. Every necklace comes complete with a safety clasp and Royal Purple gift case.

Deltah PEARLS
TRADE MARK REG U.S. PAT. OFF.



Necklace Floradora. Distinctive, opaque, indestructible pearls, with beautiful and delicate creme tones. White gold fancy safety clasp. Velvet gift chest edged with gold cord.

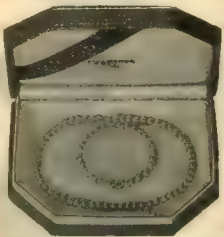
No. 90J27. Length 18 in. Each..... 4.05
No. 90J28. Length 24 in. Each..... 4.95

Necklace Diamond Gilda. Gilda quality pearls most fittingly mounted with a lovely bow-knot design diamond-set safety clasp. Offered in a Royal purple leatherette jewel case.

No. 90J23. Length 24 in. Each..... 4.25

Necklace Pinafore. An indestructible necklace. White gold bow-knot design safety clasp. Pretty velvet gift case bordered with gold cord.

No. 90J29. Length 18 in. Each..... 5.15
No. 90J30. Length 24 in. Each..... 6.35
No. 90J24. Length 30 in. Each..... 7.50



Necklace Baby Gilda. Gilda quality pearls in adorable small uniform sizes, in 12 inch length only joined by a solid gold spring ring clasp and encased in a leatherette box.

No. 90J63. Length 12 in. Each..... 1.80

Necklace Gilda. Very pretty, creme-tinted, genuine indestructible Deltah pearls of fine lustre. Solid white gold spring ring clasp. Gift case.

No. 90J25. Length 18 in. Each..... 2.35
No. 90J26. Length 24 in. Each..... 2.90

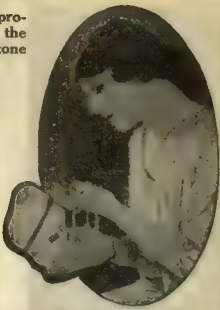
Deltah PEARLS

TRADE MARK REG. U.S. PAT. OFF.

Each necklace faithfully reproduces every fine quality of the genuine pearls in color, lustre, tone and sheen.

Necklace Diamond Elvira. A strand of Deltah indestructible pearls creme tints and tones. The clasp is 14-k. white gold set with one diamond. Offered in an octagon shaped velvet case with gold legs and apron front.

No. 90J53. Length 24 inches. Each..... 14.65
No. 90J54. Length 30 inches. Each..... 16.90



Necklace De Luxe Elvira. A strand of extraordinarily beautiful, indestructible pearls with richest creme tints. The clasp is a new creation in 14-k. white gold, safety type, set with genuine diamond and two Heller Hope blue sapphires.

No. 90J57. Length 24 in. Each..... 18.80

Necklace Seville. An entirely elegant quality of indestructible Deltah pearls. Each gem with ever changing, shifting, colorful tones, and hues. The clasp is very novel being an oval-shaped Cameo with safety device Attractive gold-corded gift chest.

No. 90J51. Length 18 in. Each..... 13.35
No. 90J52. Length 24 in. Each..... 16.65

Necklace Carmen. Indestructible pearls of adorable creme tints, with a 14-k. white gold diamond-set safety clasp Presented in an unique velvet Jewel Chest with pearl tray and mirror.

No. 90J33. Length 18 in. Each..... 8.45
No. 90J34. Length 24 in. Each..... 9.85

Deltah pearls are bona fide reproductions of costly necklaces of genuine pearls. Lit with warm divine colors, yet subdued in its warmth by a soft rainbow screen, a necklace of Deltah pearls will win a place in the wearer's heart which only the sea's own priceless treasure can usurp. In colors, in lustres, in tints and tone, Deltah pearls faithfully reproduce all the charm and beauty of the exquisite Oriental gems.

Deltah PEARLS

Deltah Pearls are fully guaranteed to wear and retain their lustre. In tone and in sheen, Deltah pearls reproduce the beauty and lure of true Orientals.

Necklace Lucia. Richly lustrous indestructible pearls with 14-k. white gold safety clasp set with three diamonds and two Heller Hope blue sapphires. Presented in a velvet Jewel Case with jewel compartment and pearl tray.
No. 90J59. Length 24 in. Each..... **26.10**

Necklace La Bohme. Indestructible pearls of the opalescent variety so much admired in higher price strands. Each lovely pearl shows subtle creme-rosee tints which are charming to behold. The clasp is 14-k. white gold diamond-set safety. Presented in a steeple design velvet case.
No. 90J40. Length 24 in. Each..... **11.75**

Necklace Normandie. A strand of brilliant opalescent pearls delicately tinted in creme and rose; the clasp of 14-k. white gold with one diamond; the case is a velvet jewel chest edged with gold cord.
No. 90J32. Length 24 in. Each..... **8.25**
No. 90J37. Length 30 in. Each..... **9.40**

Duo Carmen. The highly attractive creme-toned lustrous Carmen pearls are here presented in a double strand. Both necklaces fastened to a beautiful two-strand clasp of 14-k. white gold, safety type, set with genuine diamond. Large velvet gift cabinet.
No. 90J38. Length 18 and 24 in. necklaces combined. Each..... **16.85**

10/0 and 6/0 Size Elgin Wrist Watches

10/0 SIZE WHITE GOLD FILLED AND SOLID WHITE GOLD, 7-JEWEL ELGIN WRIST WATCHES

10/0 Size 7 Jewel Elgin Movement in a 25-year white gold filled octagon shape case, engraved bezel, complete in a silk lined display box.
No. 13W48. Each..... 23.35
As above in 14k solid white gold case.
No. 13W49. Each..... 26.10

10/0 Size, 7 Jewel Elgin Movement in a 25-year white gold filled cushion shape case, engraved bezel, complete in a silk lined display box.
No. 13W50. Each..... 23.35
As above in 14k solid white gold case.
No. 13W51. Each..... 26.10

10/0 Size, 7 Jewel Elgin Movement in a 25-year white gold filled tonneau shape case, engraved bezel, complete in a silk-lined display box.
No. 13W52. Each..... 23.35
As above in 14k solid white gold case.
No. 13W53. Each..... 26.10

10/0 SIZE SOLID WHITE GOLD LATEST DESIGN CASES WITH 7 AND 15 JEWEL ELGIN WRIST WATCHES

10/0 Size, 7 Jewel Elgin Movement in a 14k solid white gold tonneau shape case and square dial, complete in a silk-lined display box.
No. 13W54. Each..... 27.60
As above in 15 jewel Elgin movement.
No. 13W55. Each..... 32.50

10/0 Size, 7 Jewel Elgin Movement in a 14k solid white gold tonneau shape case and oval dial, complete in a silk-lined display box.
No. 13W56. Each..... 27.60
As above in 15 jewel Elgin movement.
No. 13W57. Each..... 32.50

10/0 Size, 7 Jewel Elgin Movement in a 14k solid white gold tonneau shape case and rectangular dial, complete in a silk-lined display box.
No. 13W58. Each..... 27.60
As above in 15 jewel Elgin movement.
No. 13W59. Each..... 32.50

6/0 Size, 7 and 15 Jewel Elgin Wrist Watches

Tonneau Design

Cushion Design

Octagon Design

6/0 Size, White Gold Filled Cases, warranted to wear 25 years. Fitted with 7 and 15 jewel Elgin movements, silver dial. Complete with silk ribbon band and display box.

7-JEWEL ELGIN

No. 13W22.
Octagon design. Each 18.45
No. 13W23.
Cushion design. Each 18.45
No. 13W24.
Tonneau design. Each 18.45

15-JEWEL ELGIN

No. 13W45.
Octagon design. Each 23.65
No. 13W46.
Cushion design. Each 23.65
No. 13W47.
Tonneau design. Each 23.65

Elgin Bracelet Watches

Elgin Bracelet Watches Are Subject to a Discount. Write for a Confidential Net Price List.

No. 13W1. Elgin Bracelet Watch, 2/0 size, fine gold filled case, **warranted to wear for 20 years,** plain polished, extensible self-adjusting bracelet. Fitted with 7-jewel Elgin movement. Each..... **12.00**

No. 13W2. As above, engraved bezel. Each **13.62**

No. 13W3. Elgin Bracelet Watch, 6/0 size, fine gold filled case, **warranted to wear for 20 years,** plain polished. Gold filled, self-adjusting extensible bracelet. Fitted with 7-jewel Elgin movement. Each **15.20**

No. 13W4. As above, engraved bezel. Each **15.82**

No. 13W5. Elgin Bracelet Watch, 6/0 size, fine gold filled case, **warranted to wear for 20 years,** Plain polished, octagon shape, gold filled, extensible, self-adjusting bracelet. Fitted with 7-jewel Elgin movement. Each..... **16.55**

No. 13W12. As above, engraved bezel. Each **17.30**

Elgin Bracelet Watches with Fine Silk Ribbon Bracelets. The Most Popular Shapes. Elgin Bracelet Watches Are Subject to a Discount. Write for Confidential Net Price List.

No. 13W13. Elgin Bracelet Watch, 6/0 size, round, gold filled case, warranted for 20 years, engraved bezel. Ribbon can be adjusted to fit any wrist. Complete with a 7-jewel Elgin movement. Each **15.82**

No. 13W14. Elgin Bracelet Watch, 6/0 size, gold filled case, guaranteed to wear for 20 years. Ribbon can be adjusted to fit any wrist. Fitted complete with a 15-jewel Elgin movement. Each..... **20.40**

No. 13W15. Elgin Bracelet Watch, 6/0 size, cushion shape, gold filled case, guaranteed to wear for 20 years. Engraved bezel with ribbon which can be adjusted to fit any wrist. 7-jewel Elgin movement complete. Each **17.30**

No. 13W16. As above, fitted with a 15-jewel Elgin movement complete. Each..... **22.50**

No. 13W17. Elgin Bracelet Watch, 6/0 size, octagon shape gold filled case, plain polished, guaranteed to wear for 20 years, with ribbon which can be adjusted to fit any wrist. 7-jewel Elgin movement complete. Each **16.55**

No. 13W18. As above, 15-jewel Elgin movement Each **21.75**

No. 13W19. Elgin Bracelet Watch, 6/0 size, octagon shape, gold filled case, engraved bezel, guarantee to wear for 20 years, with ribbon which can be adjusted to fit any size wrist. 7-jewel Elgin movement complete. Each..... **17.30**

No. 13W20. As above, fitted with 15-jewel Elgin movement complete. Each..... **22.50**

15 Jewel White Gold Elgin Ribbon Watches

Elgin Bracelet Watch, 10/0 size, octagon shaped white gold filled case, warranted to wear 25 years, fitted with 15 Jewel Elgin movement.
No. 13W27. Each $28.15
No. 13W31. As above in 14 karat white gold 31.00

Elgin Bracelet Watch, 10/0 size, cushion shaped white gold filled case, warranted to wear 25 years, fitted with 15 Jewel Elgin movement.
No. 13W28. Each $28.15
No. 13W32. As above in 14 karat solid gold 31.00

Elgin Bracelet Watch, 10/0 size, Princess Pat, round crystal, white gold filled case, warranted for 25 years, fitted with 15 Jewel Elgin movement. Gold filled case
No. 13W29. Each $28.15
No. 13W33. As above in 14 karat solid white gold case 31.00

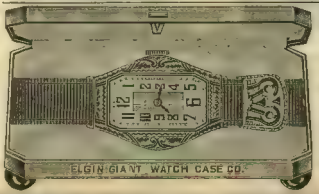
Elgin Bracelet Watch, 10/0 size, Princess Pat, fancy crystal, white gold filled case, warranted for 25 years, fitted with 15 Jewel Elgin movement.
No. 13W30. Each $29.15
No. 13W34. As above in 14 karat solid white gold case 34.00

Elgin Bracelet Watch, 10/0 size, long Tonneau shape, white gold filled case, warranted to wear 25 years, fitted with a 15 Jewel Elgin movement
No. 13W35. Each $28.15
No. 13W36. As above in 14 karat solid white gold, each 31.00

Elgin Bracelet Watch, 10/0 size, short Tonneau shape, white gold filled case, warranted to wear 25 years, fitted with a 15 Jewel Elgin movement
No. 13W37. Each $28.15
No. 13W38. As above in 14 karat solid white gold, each 31.00

Elgin Bracelet Watch, 10/0 size, fancy cushion shape, white gold filled case, warranted to wear 25 years, fitted with a 15 Jewel Elgin movement.
No. 13W39. Each $28.15
No. 13W40. As above in 14 karat solid white gold, each 31.00

Elgin Bracelet Watch, 10/0 size, fancy octagon shape, white gold filled case warranted to wear 25 years, fitted with a 15 Jewel Elgin movement.
No. 13W41. Each $28.15
No. 13W42. As above in 14 karat solid white gold, each 31.00



Elgin Bracelet Watch

7 and 15 Jewel, 10/0 Size

Elgin Bracelet Watch, 10/0 size, rectangular fancy engraved 14 karat solid white gold case fitted with a 15 Jewel Elgin movement.
No. 13W43 Each 34.00
No. 13W44. As above with a 7 Jewel Elgin movement, each 29.90

FLOOD CITY MANUFACTURING CO.

JOHNSTOWN. PA.

Electrical Supplies

Products

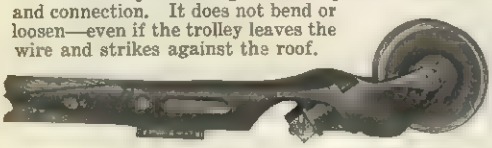
Section Insulators; "Diamond" Mining Trolley and Parts; Trolley Wheels; Bushings; Trolley Poles; Splicers; Trolley Wire Frogs; Junction Blocks; Hand Trolleys; Feed Wire Connections; Tee Connections; Mine Car Oilers; Mine Sprinklers; Brass and Bronze Parts and Castings for Mining Machines, Electric Locomotives, Mine Pumps; Room Hoists; Acid Resisting Metals for all purposes.

"Diamond" Mining Trolley and Parts

The "Diamond" Mining Trolley increases efficiency,—that's the advantage. Note why.

The pole head is smooth and oval backed, making nearly a straight line connection—which prevents harp or wheel catching on the trolley line. It will not wedge or catch in a frog but slides smoothly through.

Note the reinforced harp support between pole head and harp is strong—insures perfect contact and connection. It does not bend or loosen—even if the trolley leaves the wire and strikes against the roof.



No. 506—Diamond Trolley Complete with Pole, Pole Head, Harp, Wheel and Axle Pin.

No. 503—Trolley Pole Head.

No. 510 Harp Swivel Bolt

No. 509—Trolley Harp

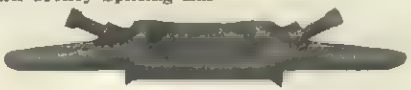
No. 511 Trolley Wheel Axle Pin with Cotters

Trolley Wheel No. 512

Code Word	No.	Name of Part
Effect	506	Diamond Trolley Complete with Pole, Polehead Harp, Wheel and Axle Pin
Endure	507	Trolley Polehead and Harp Complete without Pole and Wheel
Efficient	508	Trolley Pole Head—Bronze
Effort	509	Trolley Harp, less Axle Pin—Bronze
Efficiency	510	Harp Swivel Bolt
Efficacy	511	Trolley Wheel Axle Pin with Cotters
Liquable	512	4 Inch Trolley Wheel
Require	513	5 Inch Trolley Wheel
Emporium	514	6 Inch Spoke Type Wheel
Empress	515	4 Inch Spoke Type Wheel
Express	516	6 Inch Trolley Harp—Bronze
Expresser	517	Trolley Polehead Malleable
Expressing	518	4 Inch Trolley Harp—Malleable
Expression	519	6 Inch Trolley Harp—Malleable
Brass	520	½"x⅝"x1¼" Trolley Wheel Bushing
Brazes	521	⅝"x1"x1½" Trolley Wheel Bushing
Brazier	522	⅞"x1"x2" Trolley Wheel Bushing

We have increased the length of the cable connection. It gives a greater contact surface making a stronger and more effective connection.

Clark Trolley Splicing Ear



Made of high quality bronze 12 or 14 inches long.

Code Word	No.	Size and Style Wire
Remora	810	1-0 Round or Grooved Wire
Remler	811	2-0 Round or Grooved Wire
Relief	812	3-0 Round or Grooved Wire
Relieve	813	4-0 Round or Grooved Wire
Release	815	2-0 Figure 8 Wire
Reliance	815	3-0 Figure 8 Wire
Reliable	815½	4-0 Figure 8 Wire

Bronze Trolley Frogs

These frogs are made of high grade bronze with the pan and other parts, subject to wear, made extra heavy. They are furnished right or left hand with set screws and binding clamps.

Frogs listed have an angle of 15 degrees and are suitable for use where the distance from track switch point to track frog varies from 20 to 30 feet. All frogs are for round or grooved trolley wire, and have an overall length of 17 inches and width of 5½ inches.

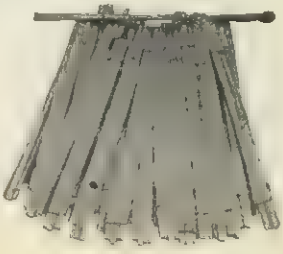
Bronze Trolley Frog, 15 Degrees

Code Word	No.	Standard Bronze Frog, 15 Degrees
Anchor	572	1 or 2-0 Wire, Right Hand
Anchorage	573	3-0 Wire, Right Hand
Anchorer	574	4-0 Wire, Right Hand
Anchorines	575	1 or 2-0 Wire, Left Hand
Ancient	576	3-0 Wire, Left Hand
Anciently	577	4-0 Wire, Left Hand

Diamond Trolley Poles

Made from selected grade of oak and ash wood. to specifications. Perfectly straight, smooth, dry and free from knots.

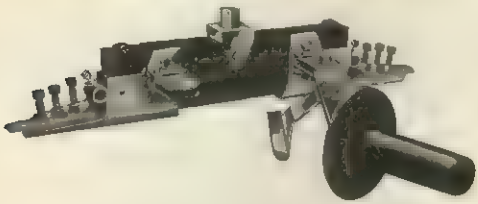
In following sizes:



3'10"	x 2¼" x 1⅜"
4'	x 2¼" x 1⅜"
4'06"	x 2¼" x 1⅜"
5'	x 2¼" x 1⅜"
5'06"	x 2¼" x 1⅜"
6'	x 2¼" x 1⅜"
7'	x 2¼" x 1⅜"
8'	x 2¼" x 1⅜"
9'	x 2¼" x 1⅜"

Type HH Section Breakers

Left Hand, With Switch Closed



Left Hand, With Switch Open

A trouble saving, money saving section breaker. It prolongs the life of your motor by eliminating the strain experienced when the trolley "jumps" the "dead" space and remakes the contact with a jar—with consequent injury to the motor.

'Tis a section breaker and line switch combined. One piece of mechanism easily operated. It does away with the old-fashioned insulator and separate switch combination, and it costs much less.

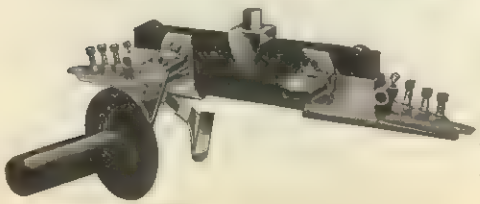
This switch blade or "Fin" causes the trolley wheel to pass smoothly over the breaker without arcing, and does away with the old style jumper. It closes the switch and "dead" or insulated section of the breaker by one motion.

In case of trouble the Type HH Section Breaker again proves its worth. It enables you to cut out any certain section of your trolley line without interrupting the whole system.

TYPE HH SECTION INSULATOR—LEFT HAND

Code Word	No	
Outwit	820	1 and 2-0 Round or Grooved
Outwear	821	3-0 Round or Grooved
Outswell	822	4-0 Round or Grooved
Outwall	823	2-0 Fig. 8 Wire
Outlook	824	3-0 Fig. 8 Wire
Outbreak	825	4-0 Fig. 8 Wire

Right Hand With Switch Closed

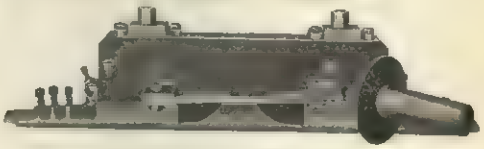


Right Hand, With Switch Open

TYPE HH SECTION INSULATOR—RIGHT HAND

Code Word	No	
Rex	500	1 and 2-0 Round or Grooved
Reliable	501	3-0 Round or Grooved
Reserve	502	4-0 Round or Grooved
Rover	503	2-0 Fig. 8 Wire
Reliant	504	3-0 Fig. 8 Wire
Relay	505	4-0 Fig. 8 Wire

Style "D" Section Insulator Switches



Right Hand, With Switch Closed

It's a cost cutter. It saves your trolley wheels, trolley line, breakers, motors and motor gears, because there is no dead section in your trolley line; just a straight, smooth, metallic under-run; no breaking and remaking the contact with a jump to injure your motor. The locomotive passes smoothly over.

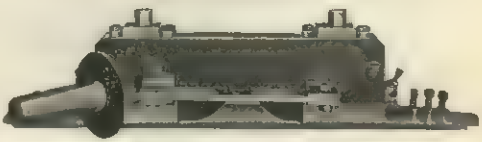
Destructive Arching is Eliminated by using our Section Insulator Switch.

Right Hand, With Switch Open

It stands for increased efficiency in your trolley line equipment. It is easy to install and operate. It is a sectional insulator and cut out switch in one. It enables you to cut out any certain section of your trolley equipment without interrupting the whole system. It does away with the old style section insulator and separate switch. It is more efficient than both and cheaper than either.

STYLE "D" SECTION INSULATOR SWITCH—LEFT HAND

Code Word	No.	Size and Style Wire
Deliver	827	3-0 Round or Grooved
Delate	828	4-0 Round or Grooved
Duty	831	4-0 Fig. 8 Wire



Left Hand, With Switch Closed

Left Hand, With Switch Open

STYLE "D" SECTION INSULATOR SWITCH—RIGHT HAND

Code Word	No	Size and Style Wire
Dale	544	3-0 Round or Grooved
Dalle	545	4-0 Round or Grooved
Dado	548	4-0 Fig. 8 Wire

Field Coil Testing Machine
Are your Field Coils defective?

Field Coil Tester
Detects Weak Fields Reduces Armature Trouble

When you are having armatures blowing up find out where your trouble is in having so many armatures repaired.

The Flood City Field Coil Testing Machine is a device for locating faults in series, field and armature coils. It consists of a U shaped electro magnet, excited by coils on the left hand pole.

Operation: Connect the machine to A-C Current, close the magnet and switch and note reading on ammeter. Then place coil to be tested on right hand pole and close magnet and switch. The location of defects can very often be located from the outside of insulation of coil when under this test. If coil is perfect, reading on ammeter is same as previous reading; if coil has any shorts, reading on ammeter will be increased in proportion to condition of coil.

Cut the Cost of your Excess Electrical Repair Bills—Certain large coal companies in Cambria County, Pa. are using this Field Coil Testing Machine at each of their large mines, for testing their coils and save themselves many thousands of dollars in excessive repairs by detecting coil troubles and patching them up before armatures become defective or blow up.

Write for Information.

Code	No.	Capacity
Mellow	2000	Connected for 110 Volt, A. C.
Mellowing	2001	Connected for 220 Volt, A. C.
Mellowness	2002	Connected for 440 Volt, A. C.

Flood City Welding Machine
250 and 500 Volts D. C.

250-500 Volt Welding Machine

This Welding Machine is very compact and light and can be carried through mine conveniently by one man. Weighs approximately 40 lbs. in 250 volt size and approximately 70 lbs. in 500 volt size. We guarantee this machine to be efficient for bonding and various repair work around the mine.

For details regarding this machine and instructions for use on various welding write for Bulletin No. 99 describing Flood City Welding Machine in detail.

Code Word	No.	
Pour	1050	Flood City Welding Machine, 250 Volts, D.C. Complete with Shield and Cables.
Potter	1051	Flood City Welding Machine, 500 Volts, D.C. Complete with Shield and Cables.

Bearings For All Types of Mine Locomotives and Mining Machines

We manufacture and carry in stock at all times a supply of Bronze Armature Bearings, Axle Linings, Journal Brasses and Bushings for the following makes of locomotives and mining machines:

Locomotives	Mining Machines
Baldwin-Westinghouse	Goodman
General Electric	Jeffrey
Goodman	Sullivan
Morgan-Gardner	Morgan-Gardner
Jeffrey	

Send us size and type of machine and give manufacturer's catalog number of part desired and let us quote you.

Modern machinery is as good as its bearings. While all appliances made by responsible manufacturers are good, it still remains true that machinery fitted with Flood City Bearings save in wear and tear of equipment.

Journal Brass for Locomotive.

Mining Machine Bushing

We carry at all times a large stock of axle liners for immediate shipment and with our unexcelled railroad facilities we can offer you prompt service. If in doubt submit your bearing problems to us and get our recommendations for your equipment.

HARDSOCG MANUFACTURING CO.

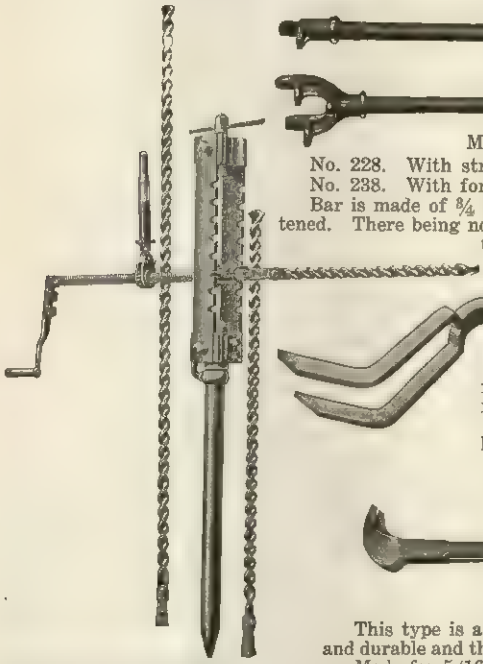
ESTABLISHED 1880

Main Office and Factory, OTTUMWA, IOWA

BRANCH HOUSES: EVANSVILLE, IND., AND PITTSBURG, KAN.

Manufacturers of

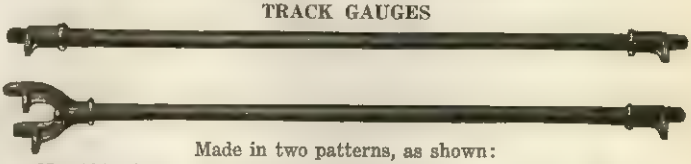
Coal Drills, Rock Drills, Miners' Tools & Supplies



ROCK RATCHET DRILL
Western Pattern

Many other types of Coal Drills and Breast Augers for all purposes.

TRACK GAUGES



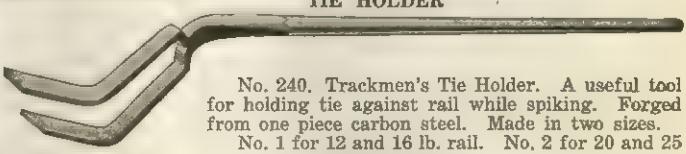
Made in two patterns, as shown:

No. 228. With straight head on either end.

No. 238. With forked head on one end.

Bar is made of ¾ inch pipe to which malleable heads are securely fastened. There being no standard gauge for mine track, always give distance between rails, as well as catalog number.

TIE HOLDER



No. 240. Trackmen's Tie Holder. A useful tool for holding tie against rail while spiking. Forged from one piece carbon steel. Made in two sizes.

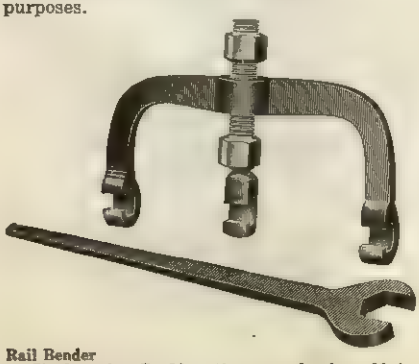
No. 1 for 12 and 16 lb. rail. No. 2 for 20 and 25 lb. rail. Always specify size.

TRACKMEN'S SPIKE BAR

No. 105

This type is a special favorite with trackmen, as it is very strong and durable and the large heel admits of driving claw under spike head.

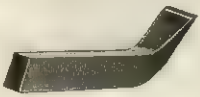
Made for 5/16 and ⅜ inch spikes. Length 32 inches; approximate weight 8 lbs.



Rail Bender

Single acting, Double acting screw benders. Made of solid steel, the screws are forged and accurately machined and fitted.

MACHINE CHAIN CUTTER BITS



No. 108

No. 108. Chisel Point.

No. 208. Pick Point.

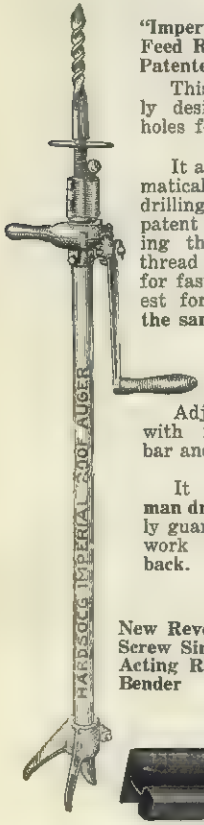
Made of high grade cutter bit steel ½x¾ inch or ½x1 inch in either pick or chisel point. Please specify make and type of machine on which they are to be used.

Hardsocg "Premier" and Wabash Brands. Finest polished shovels made.

THE MARTIN HARDSOCG CO.

PITTSBURGH, PA. Branch House—ATHENS, OHIO

In addition to the items illustrated below, which are especially designed for the personal use of coal companies in their own work, and some of which are new to many mine managers, we make every tool used by the coal miner. We cater especially to quality, and with 40 years' experience should be able to serve you with intelligence. We can make any tool you need.



"Imperial" Automatic Feed Roof Auger, Patented

This drill is especially designed for boring holes for insulator pegs.

It adjusts itself automatically to hard or soft drilling by means of our patent feed feature, having the effect of any thread from the coarsest for fast work to the finest for hard rock — **on the same thread bar.**

Adjustable in height with reversible thread bar and quite light.

It is strictly a **one man drill** and is absolutely guaranteed to do your work or **your money back.**

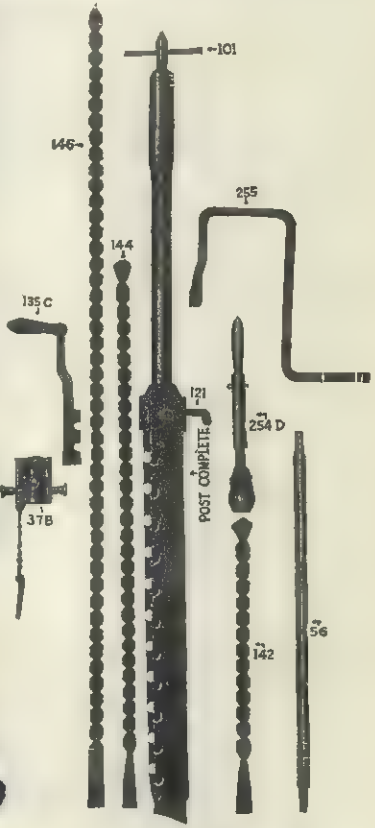
Our New Imperial Ratchet Rock Drill

For your dead work, horse backs, taking up bottom or shooting down top. Driving through rock, hard fireclay and any hard drilling that is possible to do with a rotary auger.

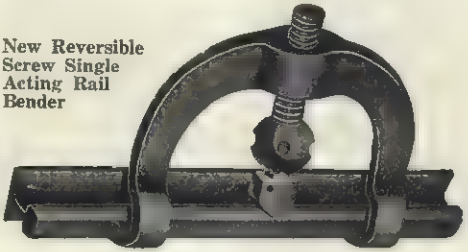
We have testimonials showing a saving of 75% in labor by the use of this drill.

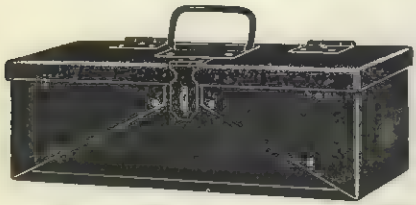
Heavy, strong and durable and not expensive.

NOTE — Jack screw at end where there is least pressure and can not bend. Other end is forged and welded solid where most pressure comes.



New Reversible Screw Single Acting Rail Bender





Bit Boxes
Heavy Sheet Steel
Everlasting
You Need Them
For sending bits in and out of mine. Hold 100 bits of the large size.

Bits
Special Steel
Perfect Shape

We also sell, cut to length, Steel for making bits.

Puncher Picks
Standard, B Crucible and Imperial Grades.

If you use punchers we can increase your output.

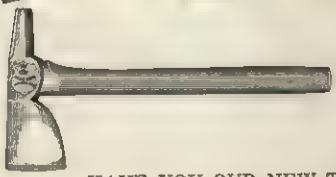
HARDSOCG PRODUCTS---Continued

Track Chisels or Cold Cutters
from best steel, 3 and 4½ lb.

Mine Spike Mauls
Standard size 5 lb. Uses regular sledge handle. HIGH CARBON.

Track Adze or Spike Adze. Take the regular sledge handle. Originated with us. HARDSOCG quality, finely finished.

NEW PATTERN FOR MINE WORK.



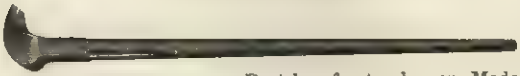
Track Hatchets

We formerly had these made but had too many complaints. NOW WE MAKE OUR OWN and we make them so THEY DON'T BREAK.

Shipped handled unless ordered without.

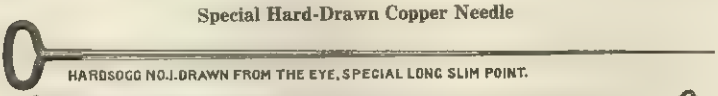
HAVE YOU OUR NEW TOOL CATALOG?

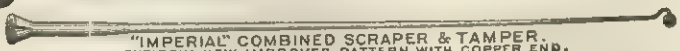
Imperial Spike Bars



For coal company use. Best bar for track men. Made with heel to drive under head. Has met with universal favor. 42" long.

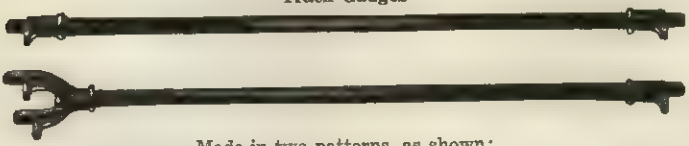
Special Hard-Drawn Copper Needle





5 to 7 ft. Finest tool of the kind made. 4" and 6" Copper Heads.

Track Gauges



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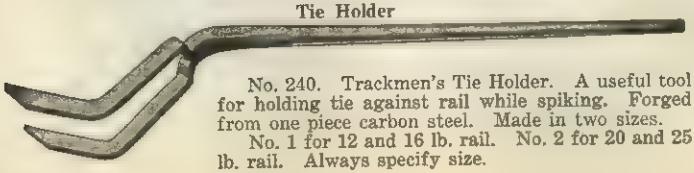
Tie Holder



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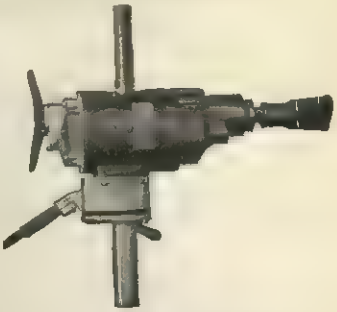
No. 1 for 12 and 16 lb. rail. No. 2 for 20 and 25 lb. rail. Always specify size.

Electric Drills
For Coal—Wood and Iron



Our D. C. 2X Ventilated Type. Lightest, Strongest, Best Drill of one man type for coal.

SEND FOR ELECTRIC DRILL FOLDER.

Power Augers
of every size—1¼, 1½, 1⅝, 1¾ and 2 inch.

2 SPECIAL OVAL AUGERS—NEW

Made especially for Electric Coal Drills in lengths up to 14 ft.

Hardsocg Copper Blasting Tools

COPPER NEEDLES
COPPER HEAD HAND DRILLS and TAMPERS
made of absolutely pure Hard-Drawn Copper have the desired stiffness

SHOT FIRING BATTERIES

WIRE AND BATTERY BOXES

QUALITY and SERVICE

HELMICK FOUNDRY-MACHINE CO.

FAIRMONT, WEST VIRGINIA

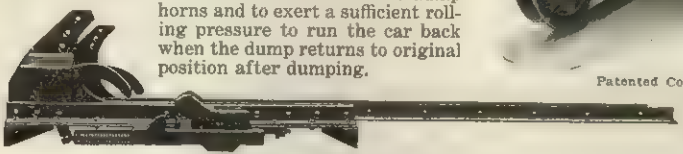
Mine Cars

Products

Manufacturers of Mine Cars, Frogs, Switches, Track Accessories, Tipple Equipments, Wood Frame Dumps, Plain Steel Platform Dumps, **Helmick Patent Roll Back Dumps**, Incline Plane Machines and Wood Lagged Drums, Scraper Conveyors, Elevators and Gates for Coal Storage Bins, Locomotive Coaling Station Machinery.

Helmick Roll Back Dump (Patented)

This Dump is so designed as to minimize the shock on the car when the wheels strike the dump horns and to exert a sufficient rolling pressure to run the car back when the dump returns to original position after dumping.



Helmick Roll Back Dump (Patented)

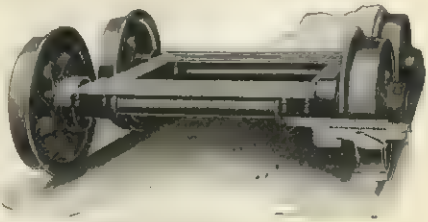
As the car rolls on to the dump the car wheels are brought into engagement with the arc levers or arms arranged in advance of the dump horns and in the path of travel of the tread of the car wheels and as these arc levers are held in a raised position by action of springs the movement of the car is retarded by the levers, which levers are depressed by the weight of the car. The car holds these levers in depressed position until the car has been dumped and nearly returned to original horizontal position. The springs then are of sufficient strength to cause shaft on which levers are fixed to be rocked which moves the levers upwardly, and as they are in contact with the wheels and below the horizontal center line of the wheels the car is rolled back off the dump. Complete dumping brake, sword weights and lever equipment is furnished with this dump. It has passed the experimental stage and is giving excellent satisfaction.

Helmick Mine Cars are constructed on mechanical lines, the parts are interchangeable, the design is made to give strength and life to the car, the workmanship is top-notch, the materials high-class, every car built for service.

Mine Cars specially designed and constructed to your requirements. Write, sending all available data. Blank data sheet furnished on application.

Helmick Patented Corrugated Steel Plate Axle Base is a rigid practical development that has taken a very prominent place in mine car construction.

Absolute alignment in mine car trucks is effected by use of this base. The corrugations are parallel



Patented Corrugated Axle Base.

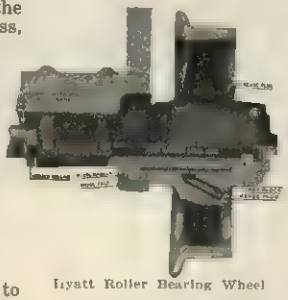
to each other across the bottom of the car. They distribute the load uniformly to the journal boxes. The spreader tie bars are riveted to the two corrugated plates in aligning forms, assuring unity in measure and accuracy in duplication.

The Axles are of High Carbon Cold Rolled steel and have electrically welded heavy collars.

This equipment is used with either roller bearing or self-oiling wheels.

Front View of Spring Oiler Wheel

Front View of Solid Cap Self-Oiling Wheel



Hyatt Roller Bearing Wheel

Timken Roller Bearing Wheel

The **Helmick** Patent Roller Bearing Wheels are built for service. Readily accessible to all parts, wheel easily removed without turning car over.

Our Roller Bearing Wheels and self-oiling wheels have those sterling qualities, heavy chill, strength, service, notable in all Helmick Wheels.

The distance between car bottom and axle top is only ¼", instead of the usual 1¼" to 1½". The extra inch height of car body that can be secured for the same overall height makes it possible to haul in the course of a year 170 extra tons of coal

Double Angle Bar Truck

(based on 6' x 12' car, making 4 trips daily, 280 days in the year). The single angle bar truck is extremely satisfactory when used with old type high cars.

Wheels

The method of manufacture of Hockensmith wheels is the result of years of research and experiment. The iron conforms to the following analysis:

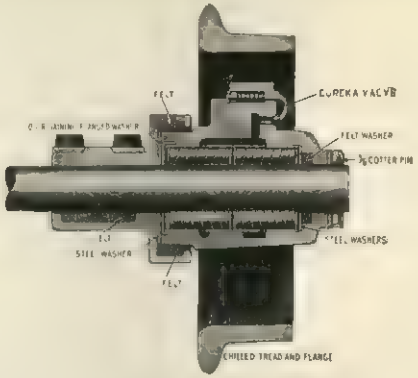
Sulphur. . .....Under 1/10 of 1%
Silicon..... ...Under 1%
Manganese.....¾ to 1%

Outside Valve Wheel

While still white hot the castings are conveyed to annealing furnaces. Finishing is done at one setting on heavy duty turret boring mills, which assures that the bore will be concentric with tread and flange.

Properly chilled tread and flange assures long wear and ample strength.

The oiling arrangement is especially effective. A sheet steel trap retains the lubricant in the large reservoir, independent of the valve.



Cross Section, Outside Valve Wheel

Other Products

The other products listed all conform to the high Hockensmith standards. They are fully described in a catalogue, sent on request.

A Guarantee of Integrity

This company is by invitation a member of the Rice Leaders of the World Association. One representative, who ranks first on the basis of financial

strength, character of service, and quality of product, is selected from each industry. The fact that Hockensmith was chosen is the guarantee of commercial integrity.

Personnel

The officials in the Hockensmith organization are all men who have worked for years for the company. All of them are actively engaged in the management.

Chairman of the Board.....F. C. Hockensmith
President and Gen. Mgr.... ...W. D. Hockensmith
Vice President..... .....C. L. Herbster
Treasurer.....D. M. Wagoner
Secretary.....F. L. Shallenberger
General Superintendent.....W. K. W. Hansen
Asst. Plant Manager.....George E. Ogilvie

THE HOCKENSMITH WHEEL & MINE CAR CO.

PENN, PENNSYLVANIA

PITTSBURGH DISTRICT

Sales Representatives

Huntington, W Va — Huntington Supply & Equipment Co.
Clarksburg, W. Va — ...Mr Norman Strugnell
Knoxville, Tenn. . . . . Webster & Co
Chicago, Ill..... B. E. Shonthal & Co

Mine Cars

Products

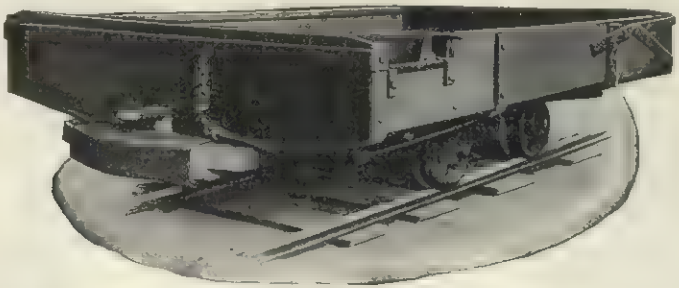
Mine Cars—steel, wood or composite.
Mine Car Wheels—plain and roller bearing.
Cast Iron Pipe.
Mine Car Hitchings.
Grate Bars.
Angle Bar Trucks.
Sheaves—bell or rope.
Switches, Frogs and Turnouts.
Oil and Grease Guns.
Motor Wheels.

Mine Cars

Hockensmith cars are made up to fit each specific installation. A survey is made to determine the customers exact requirements, and a type of car designed, that will fill them perfectly.

Especially interesting are the low type cars, extensively used with mechanical loaders in thin seam mining.

These cars have maximum capacity for their height—a highly important point.



Thin Seam Type—Steel-Wood Construction

Cars can be furnished in various heights and sizes, in steel, wood, or the extremely satisfactory composite type. They can be arranged for end or rotary dumping. Trucks may be either the single or double angle bar type. Wheels can be furnished plain or roller bearing, yoke or solid cap linch pin style. An efficient oiling system, with either outside, or pushbutton valve may be had. Band or shoe brakes, with any desired rigging, can be provided.

Low cars are likewise valuable for hand loading. It is obvious that a miner does twice as much work lifting coal 60" in loading as 30". With a low car, he can load more coal with the same expenditure of energy.

Thin Seam Type Car

Regardless of the style or type of car, the purchaser is assured of simplicity of construction, high standards of workmanship and material, correct design, and long and satisfactory service.

Trucks

The double angle bar truck is one of the best construction forms yet devised. Four angles are used, bolted to the floor of the car. Uniform spacing is preserved by spacing straps.

Cast iron boxes are set in the angles. Bosses prevent movement, and take up side strain on curves. Recesses filled with felt packing lubricate the cold rolled steel axles.

THE HOWE SCALE COMPANY

RUTLAND, VT.

Agencies

NEW YORK	CHICAGO	MINNEAPOLIS
CLEVELAND	PHILADELPHIA	CINCINNATI
SAN FRANCISCO	ST. LOUIS	KANSAS CITY
BOSTON	PORTLAND, ORE	ATLANTA, GA
NEW ORLEANS	PITTSBURGH	

Manufacturers of

Scales of All Kinds and Capacities

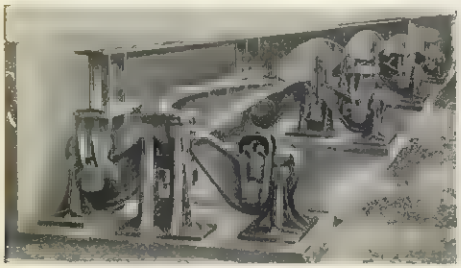
Straight Lever Suspended Platform Track Scale

The Howe Track Scales of the Straight Lever Suspended Platform type are made according to the specifications of the American Railway Association.

The levers are made of high quality grey iron free from imperfections. All connections between levers are adjustable and self-aligning tool-steel bearings.

All lever stands have machined bases of 300 per cent. greater area than many scales of the same rating.

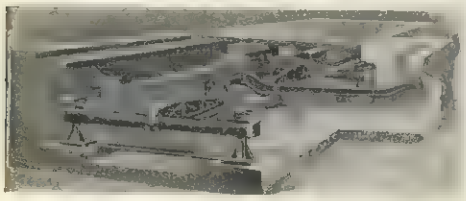
Pivots and bearings are made of a high-carbon crucible steel of the highest grade. At an extra charge the pivots and bearings can be furnished



Straight Lever Track Scale—Showing Mechanism

of a special chromium-vanadium alloy which has been specially compounded to obtain the highest wearing qualities for these vital parts. They are milled all over, not hammer forged.

There is a patented adjustable machined wedge to secure uniform strain on main suspension links, uniform pressure on the knife edges for the entire



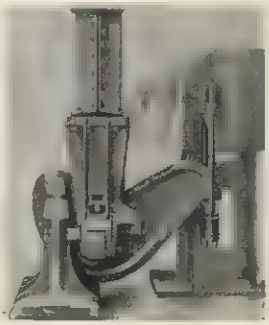
Auto Truck Scale Standard

length of contact with bearing steel, and to secure perfect contact with platform girders.

All bearings in stands are removable without changing setting of stand, and, being machined to exact dimensions, are interchangeable.

Vertical members of fulcrum plate are attached to base with machined joint and are removable for installation purposes without driving the fulcrum pivot. Upward pull taken by machined flanges.

All contact surfaces are machined.

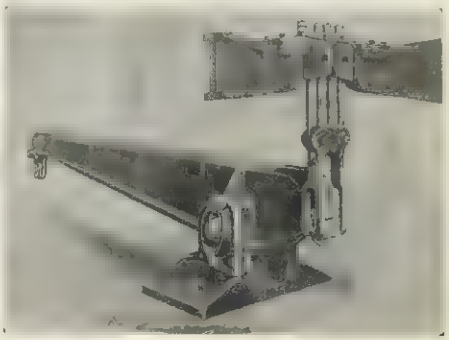


Main Lever—Straight Lever Track Scale

Reinforced tool-steel pivots and self-aligning tool-steel bearings.

Shackles are adjustable both vertically and horizontally.

Nose irons are held in machined ways.



Track Scale, 5th Lever and Connection

The main longitudinal girders are I-beams with diagonal bracing, the size of the beams varying with the length of span between sections and in accordance with standard specifications of Scale Manufacturers' Association.

Howe Motor Trucks and Tipple Scales

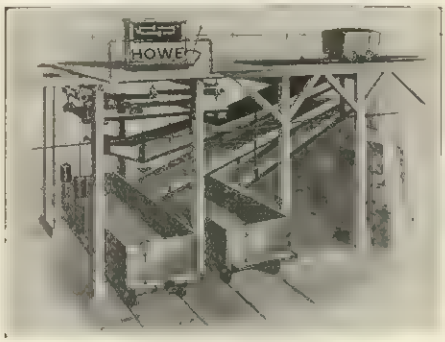
The motor truck has a very large portion of the load, sometimes as high as 90% is concentrated on the rear axle, and the shock upon a scale as the load enters and leaves the platform is tremendous. The Howe Motor Truck Scale is designed upon modern engineering principles as regards the impact and load concentration, resulting from this rapidly growing traffic. **There are but three levers in the Howe Motor Truck and Tipple Scale, thus less points of contact, less friction, greater sensitiveness, finer accuracy.**

Pivot Head and Ball Bearing

The crowning feature in these scales is the Ball Protected Bearings, the only practical and time-tried method on the market for absorbing platform shocks and protecting the knife edges from wear and final destruction. The tool steel fulcrum bearings on which the knife edges rest are rigidly held in place, yet automatically adjust themselves to the sharpened knife edges and make full length contact. This "rigid fulcrum" construction, so called, holds the

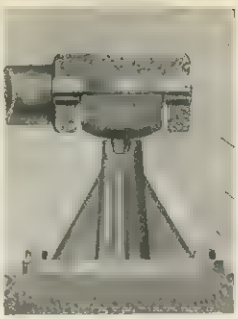
Double Ball Bearing

scale levers motionless and the knife edges do not change their position thereby insuring longer life. The ball bearings respond to every movement of the platform in any direction and thus prevent the platform movement from affecting the vital parts of



Coal Tipple Scales

the scale: the knife edges and bearings. The levers always remain in the same position, the ball bearings absorbing the platform thrusts. No swinging motion of levers, no displacement of parts. There are only two vertical suspensions, of ample length.



Accuracy is secured and durability maintained by backing the pivots with cast iron. Without reinforcement the pivot might spring under a load and cause inaccuracy in weighing. **Sturdiness, simplicity and durability,** three most **important factors,** are emphasized **in all models** of Howe Scales.

Pivots Backing No backing Bent pivot

Recording Beam Poise with Double Grip

Howe Recording Beams eliminate the human element by printing correct weights on a ticket, in duplicate, if desired. Prevent mistakes in reading weights and copying figures.

HOWE RECORDING BEAM WITH HARD BRONZE FIGURES

Capacity	
10 Tons	20,000 lbs. by 5 lbs.
15 Tons	30,000 lbs. by 10 lbs.
20 Tons	40,000 lbs. by 10 lbs.

Auto Truck Scale with Platform

Complete catalogs and printed matter at your request.

Performance—That's The Real Test.

MERRICK SCALE MFG. CO.

178 Autumn Street, PASSAIC, N. J.

CABLE ADDRESS
"Weightom, Passaic, N. J.

CODES
A. B. C., Western Union

Designers of Conveyor Weighing Installations

THE WEIGHTOMETER

Product

The Merrick Conveyor Weightometer is used for automatically weighing and to register the weight of all material in transit over a belt, bucket or pan conveyor.

Uses

It is essential that mine power plants keep an accurate record of the coal consumed. Hundreds of power plants are using Merrick Weightometers weighing to storage or bunkers as well as checking the Bill of Lading weights as received. Weightometers are also used in Coal Tipple operations.

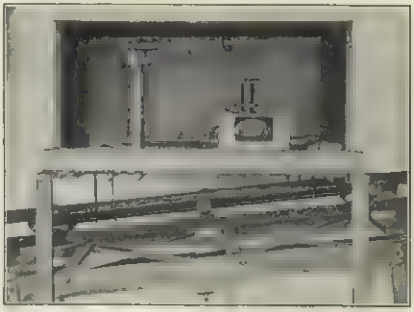
Installation of Merrick Conveyor Weightometer Weighing Coal

Description

The WEIGHTOMETER consists of a pair of weighing levers, and a steelyard or beam, similar to that of the platform scale, but of special design, so that a short section of the conveyor can be suspended from the weighing levers. The load on this suspended portion, however distributed, is always automatically counterbalanced by the buoyancy of a cylindrical iron float immersed in a mercury bath and suspended from the long end of the weighing beam. This float allows the beam to move from its position, when the conveyor is empty, in exact proportion to the weight of material on the suspended portion of the conveyor at any moment. A mechanical integrator totalizes the movement of the beam, with a factor obtained from the travel of the conveyor by means of suitable gearing from the bend pulley or sprocket wheel. The result obtained from the product of two quantities, one proportional to the weight of the material suspended and the other to the travel, therefore represents accurately the total weight of material moved. This is plainly indicated, by a register, in units and decimals of either a short ton, long ton, metric ton or other desired units.

Accuracy

When this machine is erected and operated in accordance with instructions it is guaranteed that the accuracy shall be within ninety-nine per cent of the actual weight of material carried over the conveyor at a rate of not less than one-half of the maximum capacity for which the Weightometer is designed. This is not limited to a uniform continuous load, as portions of the conveyor may be loaded to full capacity of the Weightometer with empty portions intervening.



Front View of Weightometer With Front Sheet of Dust-proof Casing Removed Showing Weigh Beam, Mercury Pot, Float, Levers and Recording or Integrator Box

Material Furnished

The WEIGHTOMETER includes all weighing levers, beam, mercury balance and integrator enclosed in a sheet iron removable casing.

For belt conveyors, all parts for suspending the idlers and driving the integrator with snub pulley from return conveyor belt, are furnished.

For bucket or pan conveyors, suspension rods and brackets for suspending the track, and sprocket chain with sprocket to attach to one of the conveyor sprocket shafts, are furnished.

Essential Features

The important advantages of the MERRICK WEIGHTOMETER are: easy installation; automatic operation; no expense for attendance; durability; simplicity; sheet iron enclosure for all working parts, thereby eliminating exposure to dust and interference by tampering; weighing without interruption of conveyor service, and a high degree of accuracy, whether the load be intermittent or uniform.

The Weightometer is also adaptable to cable car and aerial tramway installations.

THE JEFFREY MANUFACTURING COMPANY

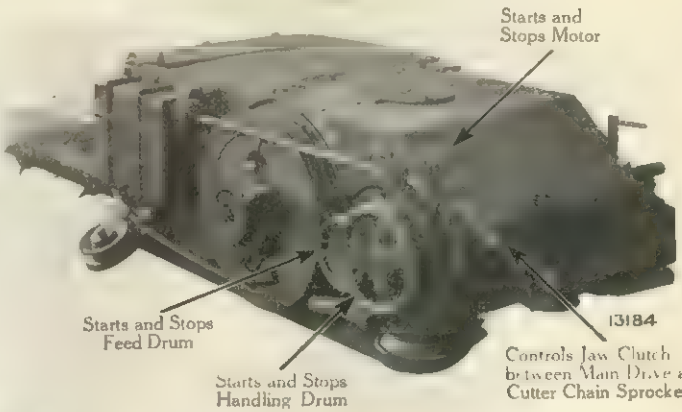
962-99 North Fourth Street, COLUMBUS, OHIO

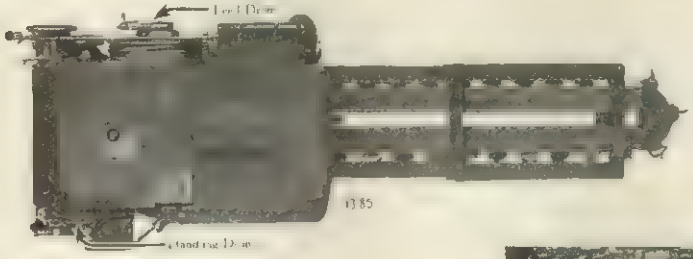
For List of Branch Offices See Page 184

35-B Shortwall Mining Machine

Light in weight, but powerful. Easily follows rolly bottom. Accessibility of all wearing parts permits of making repairs at coal face in a remarkably short time.

The 35-B Coal Cutter has less number of gears than any other machine of its kind; therefore less liable to break down; Cutter bar of rolled steel; chains, shafts, gears are forged and heat treated.


Starts and Stops Motor
Starts and Stops Feed Drum
Starts and Stops Handling Drum
13184
Controls Jaw Clutch between Main Drive and Cutter Chain Sprocket



The Handling and Feed Drums are independently driven and can be operated singly or at the same time. Disc Clutch on each drum can be thrown out while strain is on the rope without causing any damage.

Concentrated Control

All hand wheels and levers necessary for controlling its operation are concentrated in an 18" circle at the left hand corner of machine. The machine runner can lay skids and control machine without leaving his position.

Handitruck

Saves considerable time in handling machine as compared with any other make of truck. Provided with a turntable and a tilting frame so that when machine is to be unloaded it is turned on the turntable to point in the desired direction and the tilting frame facilitates unloading and loading, always permitting the wheels to remain on the truck.

Jeffrey 35-B Shortwall Coal Cutter mounted on Handitruck with Cable Reel, U. S. Government Approved Equipment.

Jeffrey Longwall Mining Machines

The Jeffrey 24-A Longwall Mining Machine has a Single Reduction Worm and Worm Gear Drive between the motor and sprocket insuring quiet operation.

Feed Drum is driven by ratchet arranged so that one or more teeth can be taken at a time, thus varying the feed speed as the machine travels along the face.

Cutter Bar mounted so that it can be swung 180 degrees. Can be equipped with Direct Current, Alternating Current or Compressed Air Motors.

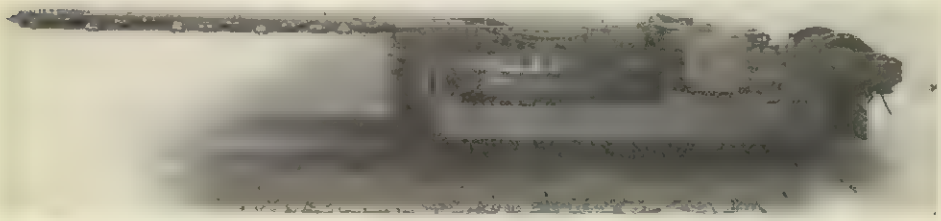
The Jeffrey 36-B Combination Shortwall and Longwall Mining Machine

Consists of the Jeffrey 36-A Longwall Machine fitted with a two-speed feed drum; a high speed for handling, and low speed for cutting.

Can be equipped with either Direct Current or Alternating Current Motor.

Height—only 15⅝" over all when fitted with D.C. Motor; 16¾" with A.C. Motor. Height over top of machine loaded on a truck with 10" wheels is D.C.—28"; A.C.—29⅝".

JEFFREY 29-C "ARCWALL" COAL CUTTER



29-C "Arcwall" Bottom Cutter

Jeffrey 29-C Arcwall Coal Cutter

A substanially built rapid coal cutter with an average cutting record of 20 to 30 places in 8 hour shifts.

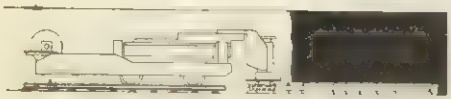
Adjustable in all directions—cuts in dirt or shale bands at the bottom or at any height in coal seam.

Operates on a truck which eliminates loading, unloading and slack shoveling. Produces more lump coal because light charges of powder may be used. Top cutting lessens danger to bad roofs.

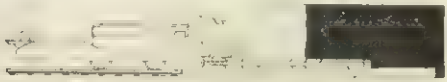
Write for Catalog.

The Jeffrey 29-C Arcwall Bottom Cutter is the only mining machine that will actually cut directly on the bottom.

Cutter bar is suspended from above and lowered to suit. When in position for cutting the special long down bits are the lowest part. No wedge shaped portions of bottom are left and the expense of taking up bottom is entirely eliminated.

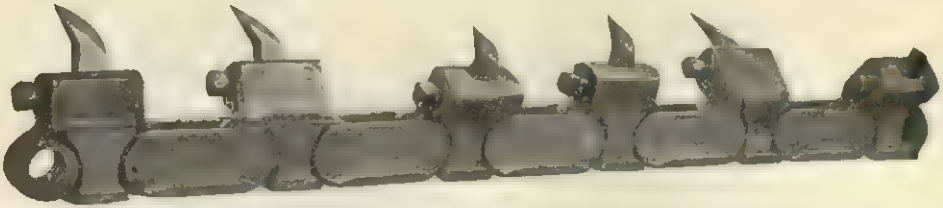


29-C Arcwall Bottom Cutter making cut along bottom. Leaves no wedge shaped portion to bottom.



Making a snubbing cut with 29-C Arcwall Bottom Cutter. The jointed cutter bar can be locked in three positions. This permits under cutting on the bottom without interfering with the track.

Jeffrey Mining Machine Parts



Jeffrey Coal Cutter Chains are the culmination of many years of experience on the part of Jeffrey Engineers in their endeavor to attain the highest standard possible in the making of coal cutter chains. Sixteen years ago the use of castings was discarded, and a process of drop forgings and finishing the bit lugs as well as the side straps has been developed. The steel for forgings for bit lugs, chain straps and set screws is rolled especially at the mills for this purpose.

The various parts are finished in machines designed especially for the purpose, which insures correct and interchangeable parts.

The largest studs and nuts, and the clearance under the rims makes it easy to draw the nuts up tight with wrench. Clearance is given the two halves of these split gears, so that they will draw up and fit tight on the axle.

Jeffrey Forged Treated Gears and Pinions

Are the only drop forged gears and pinions furnished for coal cutter and mine locomotive service. Will last 3 to 5 times longer than a cast steel gear and from 2 to 3 times longer than a hammered gear made from bar stock. The Jeffrey Drop Forged Heat Treated Gear gives a hard tough wearing surface and much additional strength from the same size of tooth, absolutely free from imperfections and blow holes. Made in sizes up to the largest of our locomotives.

JEFFREY ELECTRIC ROTARY DRILLS

Standard Cable Reel with 250 feet of flexible duplex insulated cable having insulated terminal plugs, which is furnished with the Jeffrey A-5 Drill.

Showing a Jeffrey A-1½ Electric Rotary Coal Drill Operating in coal mine.

The Jeffrey A-5 Electric Rotary Drill is a powerful, serviceable and dependable machine for drilling Coal, Shale, Slate, Rock Salt, Clay, Gypsum, Soft Rocks, or any other material which can be penetrated by an auger bit.

The following table shows the rates of forward feed obtained at different rotative speeds of the feed bar with different threads of the feed screw. Gearing and feed bars can be furnished for any of the following combinations. The figures at the right being inches per minute which the auger drills.

Descriptive Letter		Descriptive Letter	A	B
		Revolutions of Feed Screw per minute	106	224
Std.	E	5 Acme Threads per Inch	21. 2"	44.75"
	F	6 Acme Threads per Inch	17. 9"	37. 4"
	G	8 Acme Threads per Inch	13.25"	28. 0"
	H	10 Acme Threads per Inch	10. 6"	22. 4"

The regular Equipments are as follows:

Standard Speed—106 R. P. M., letter A, with six threads per inch of feed screw, letter F, combination AF, making a feed of 17.9 inches per minute.

Fast Speed—224 R. P. M., letter B, with six threads per inch of feed screw, letter F, combination BF, making a feed of 37.4 inches per minute.

THE JEFFREY MANUFACTURING COMPANY

962-99 North Fourth Street, COLUMBUS, OHIO

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New York... 1008 Hudson Terminal Bldg
Philadelphia.....615 Real Estate Tr. Bldg
Pittsburgh ..... 600 Second Avenue
Chicago ..... 858 McCormick Bldg
Montreal, Canada ..... Tower Bldg
Charleston, W. Va.....914 Kanawha St.
Scranton, Pa.....518 Union Nat'l Bk Bldg

Sales and Service Stations

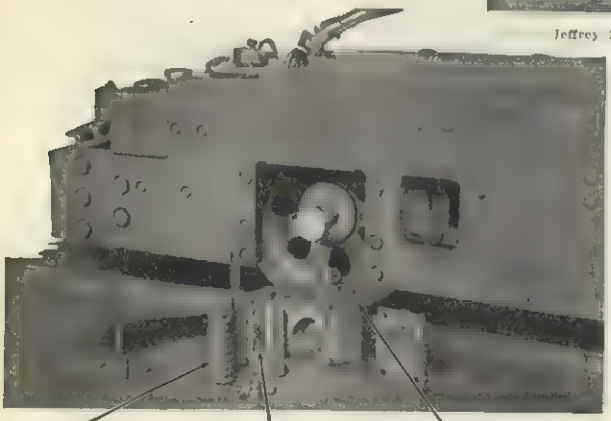
Fairmont, W. Va....Fairmont Hotel Bldg
Pittsburgh ..... 600 Second Avenue
Terre Haute, Ind.....319 Cherry St.

The Jeffrey Armorplate Type Haulage Locomotive Built in 8, 10, 13, 15, 20, 25 and 30 Ton Sizes.

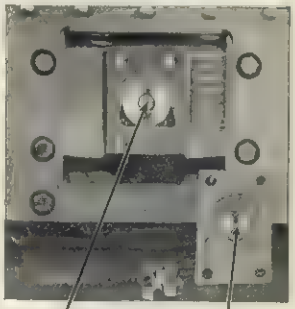
The Armorplate type frame of rolled steel slabs, not only has great strength, but also allows the greatest amount of room for motor equipment for the gauge of track and the allowable overall width.

Motors, Controllers, Resistance Brake Mechanism, etc., are readily accessible. All wearing surfaces renewable.

Jeffrey 15-Ton Armorplate Type Locomotive



Showing the method of removing the journal box of inside wheel type Jeffrey Locomotive. The frame is jacked up to remove the weight from the journal box springs. The guide plates on either side of the journal box are removed and the journal box lifted out of same

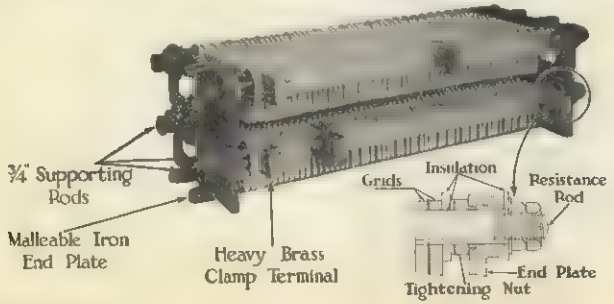


Showing phantom view of helical springs on each side of locomotive frame. Note also the Hardened Pin in end of axle to take end thrust and Hardened Steel Plate in Lid.

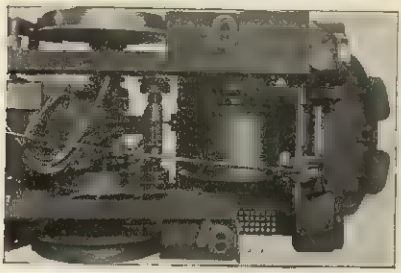
The Jeffrey Improved Journal Box enables locomotives to follow swales in tracks easily and to exert full tractive effort.

Special Cast Alloy Iron Grid Resistance is standard for all Jeffrey Locomotives. The grids are cast with greater section of the metal parallel with the supporting rods, which keeps the grids from vibrating.

The combination of these large current capacity grids with large diameter supporting rods, heavy malleable iron end plates and liberal brass clamp connections makes a thoroughly practical resistance for mine service.



Jeffrey Gathering Locomotives



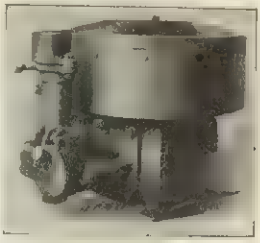
Mechanically Driven Cable Reel

A very practical Cable Reel mechanism for mine locomotives. If the tension in the cable when the reel is winding is too great the disc clutch will slip. The reel mechanism is a complete unit and self-contained, and can be supplied to be driven from an independent motor or from the intermediate shaft as shown.

Note These Features

The roller clutch sprocket on the intermediate shaft drives in one direction only. It is arranged to drive in the direction in which the cable is to be wound up. The disc clutch sprocket on the cable reel can be adjusted for any desired tension in the cable. The driving pinion on the intermediate shaft can be thrown in and out of mesh with the main gear on the axle. Once this pinion is engaged while the locomotive is gathering, it is not necessary to throw any other levers to control the cable reel mechanism, as the locomotive can move forward and back, winding the cable automatically until it is no longer necessary to use the reel, when the pinion can be thrown out of mesh.

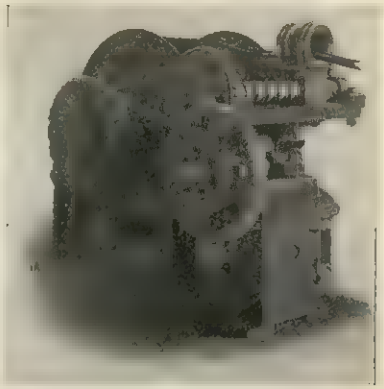
The brake on the cable reel drum prevents the reel from over-running when the locomotive stops suddenly. The spooling device lays the cable on the reel in even layers. The cable reel is insulated from the ground.



Standard Crab Device

The Jeffrey Crab Type of Gathering Locomotive is particularly useful where rooms run to the dip or where conditions are such that the locomotive cannot be taken to the face. Built in sizes 4, 6 and 8 tons.

A Jeffrey Combination Trolley and Storage Battery Locomotive. This type is made by using a standard haulage locomotive, and adding an auxiliary battery on top. Regular 250 volt trolley motors are used. Battery Box can be swung on pivot, making motor accessible.



Horizontal Type Motor Driven Cable Reel for Gathering Locomotives

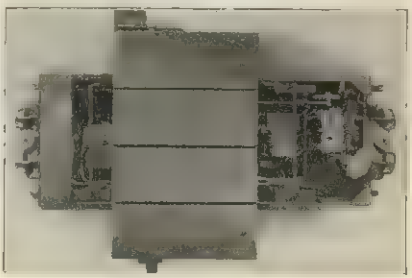
Note following features:

Three H. P. Series wound motor, run on full line voltage. No balancing resistance to keep up. Motor out in the open, not in or under reel.

Disc Clutch Sprocket adjusted to suit desired tension in cable.

Reel Flanges and Drum are all insulated from ground. Spooling Device guides cable in even layers.

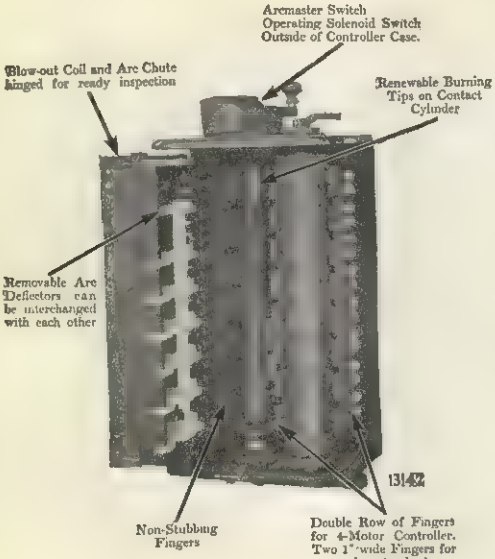
A 6-Ton Gathering Locomotive equipped with Motor Driven Type Reel Spooling past the motorman. Can also be arranged to spool from reel end if desired.



Showing Pivoted Battery Box and Accessible Motor Equipment of Jeffrey Storage Battery Locomotive.

Built in 6,000 lb., 8,000 lb. and 10,000 lb. chassis, Edison or Lead Batteries. Battery capacity up to 56 kilowatt hours.

Special Heavy Duty Controllers


Arcmaster Switch Operating Solenoid Switch Outside of Controller Case.
Blow-out Coil and Arc Chute hinged for ready inspection
Renewable Burning Tips on Contact Cylinder
Removable Arc Deflectors can be interchanged with each other
13142
Non-Stubbing Fingers
Double Row of Fingers for 4-Motor Controller. Two 1" wide Fingers for each motor lead.

Class 33 Controller

Class 33 Controller adapted for use on 13 and 20 Ton Jeffrey Locomotives.

Four-Motor Controller illustrated is of suitable capacity to operate two 15-Ton Locomotives in tandem on either 250 or 500 volts.

Has more copper in the current carrying parts than any other controller on the market.

Accessible for Inspection and Repairs.

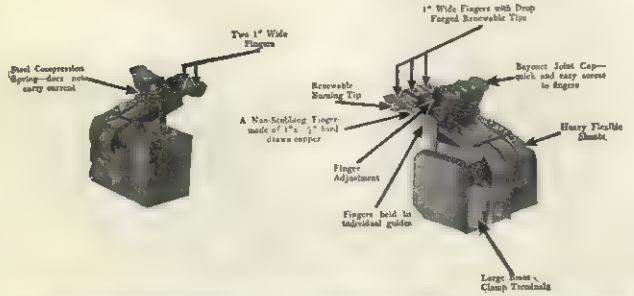
Top of solid brass with edges buffed and lacquered. All visible brass parts on inside when cover is removed are buffed, polished and lacquered.

All bolts, nuts and screws are sherrardized, which prevents rusting.

Every Finger Has Large Current Carrying Capacity

The contact on the contact cylinder has three 1" fingers on the last or running points—the intermediate points have two 1" wide fingers.

Each finger is made up of a 1"x1½" thick, hard drawn copper bar to which is riveted a drop forged copper renewable burning tip.


Two 1" Wide Fingers
1" Wide Fingers with Drop Forged Renewable Tips
Steel Compression Spring—does not carry current
Renewable Burning Tip
Bayonet Joint Cap—quick and easy access to fingers
A Non-Stubbing Finger made of 1"x ¼" hard drawn copper
Heavy Flexible Shunt
Finger Adjustment
Fingers held in individual guides
Large Brass Clamp Terminals

The reverse cylinder of the four motor is designed to use two sets of fingers, one on each side so that each motor lead on each tandem unit has two 1" wide fingers for its contacts on the reverse cylinder.

Jeffrey Class 15-A Incandescent Headlight

Standard on all Jeffrey Locomotives.

Jeffrey Arcmaster and Solenoid Switch

An addition to the Jeffrey Standard Controller to eliminate the punishment of the fingers and contacts on the controller drum.

Arcmaster is mounted on top of standard controller and takes the place of controller handle, while the solenoid switch is mounted on Locomotive outside of controller casing.

Two Socket feature permits the use of either concentrated filament bulb or a common incandescent light, giving a more diffused light.

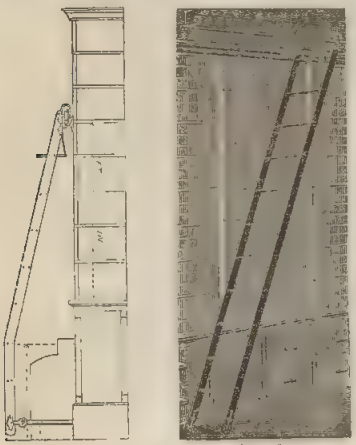
Dust and moisture proof. Main body made extra strong and shaped to cause heavy blows resulting from falling coal to glance off.

‡ROLLING SHELF LADDERS

Milbradt's—Self-Adjusting

No. 1. No. 2. No. 3

(For wood track only.)



No. 11. No. 12.

Milbradt's Patent Self-Adjusting Rolling Shelf Ladders.

Are the best and cheapest in the world for all kinds of high shelving. Where the base shelf is narrow the roller can be made longer. They are so constructed to take up the least possible space and are noiseless, neat and durable. They run so easily that a light push will propel the ladder a distance of the length of an ordinary store.

All ladders made of oak, metal parts aluminum finished.

Nos. 1, 2, 3, 11—Each.....$36.00

No. 12—Each 36.00

Steel track, including brackets. Per foot.....$0.70

Hardwod track—Per foot..... .50

How to Order.

Give the exact height from floor to top of base shelf and the width of base shelf to face of standards or uprights in shelving; the height from base shelf to top of track. The track should be put on a shelf 3 or 4 feet from top; give number of feet of track and brackets needed.

State whether you wish straight ladders or those with the bend; state number of ladders required, also if they are to be of different dimensions for different sets of shelves, if so, give all the different measurements same as above. Bear in mind these ladders are made to order and can be made to fit any shelving.

The ladders are all finished natural oil finish, but will be finished any color to suit store, if order is so given, or will be furnished without finish, thereby making it more certain to match color of shelving. Give any additional information you can that will facilitate the production of just what you want and ought to have.

Milbradts.

Fig. 5—Straight ladder that runs on track fastened to shelving near the top and that runs close to a wide base shelf. Rubber rollers run against base shelf.

Aluminum finished metal part—Each $34.00

Items marked thus ‡ not carried in stock.

Shipped from factory only.

‡ROLLING SHELF LADDERS

Milbradt's.

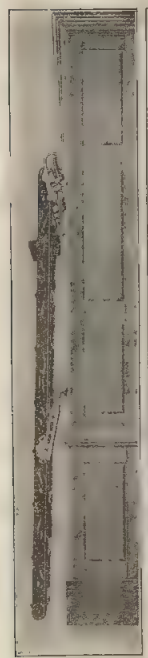
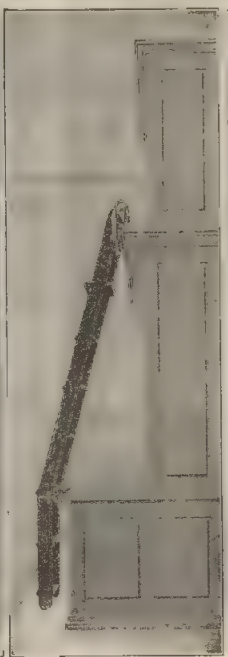
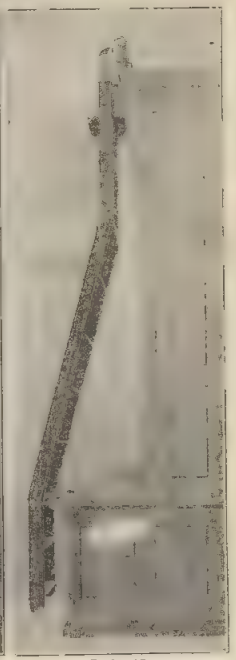


Fig. 4.

Fig. 10.



Style 9.



Style 13.

Fig. 4—Straight ladder same as Fig. 5, except has swinging arms with rollers which permits the ladder to swing close to shelving and out of the way when not in use. Price same as Fig. 5.

Fig. 10—Double bent ladder extending above track. The ladder runs on hardwood track which is screwed on top of original low shelving that has been extended to ceiling. In ordering this ladder give height from floor to top of base shelf, extreme depth of base shelf, height to top of shelving or cornice to which track is to be screwed and depth of shelving at this point, also give height desired of ladder above track. Double bent oak ladder, complete. Each $40.00

Flat hardwood track, including screws. Per foot.. .50

Items marked thus ‡ not carried in stock.
Shipped direct from factory near Minneapolis.

Bent ladder that runs on flat hardwood track, which is screwed on top of original low shelving, which has been extended to ceiling. In ordering give exact height from floor to top of base shelf, exact width of base shelf and height from base shelf to top of original base upon which the track is to be fastened, and projection of cornice if one.

No. 9—Oak ladder complete. Each..... $36.00

Flat hardwood track for No. 9 or No. 11 ladder. Per foot ..... .50

Double bent ladder that runs on a flat hardwood track which is screwed on the very top of shelving. Fork shape irons for rollers are made in lengths adapted to various widths of bases. In ordering always give height from floor to top of base shelf, width of base projection height from top of base to top of shelving or cornice, and how much cornice projects.

No. 13—Oak ladder complete. Each..... $40.00

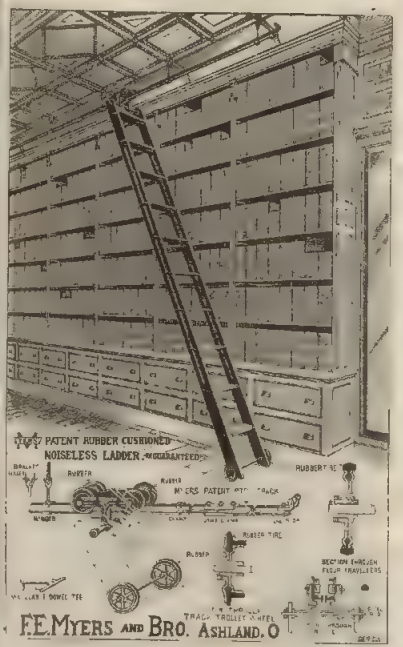
‡STORE LADDERS

Milbradt's.

No. 14.

No. 15.

Myers' Cushion Tire.



No. 14—Is a short ladder that runs on a half-round hardwood track, fastened on top of base of counter shelf. This ladder has attached at lower end one pair of swinging arms that rest against the base, but all the weight rests on top. Each $30.00

Half round wood track—Per foot..... .50

No. 15—Is a short ladder that runs on a special hardwood track which is fastened to front edge of counter shelf. This ladder has attached at lower end two rubber tired wheels, but no track is used on the floor. Each $30.00

Items marked thus ‡ not carried in stock.
Shipped direct from factory near Minneapolis.

Double angle steel rail track suspended from ceiling by means of eye bolts or flanged plates and wood screws; track is placed close to ceiling and can be leveled on an uneven ceiling without blocking or bridging. Made from best clear Georgia pine, nicely finished, filled and varnished, has open panel sides 5 inches wide with 5-inch steps, each step supported at each end by special malleable dowel tee making the strongest possible construction. Width of ladder is 12 inches, trolley is self-adjusting fitted with turned steel bearings and 3-inch anti-rattler wheels, floor travelers 5 inches in diameter, all wheels fitted with special rubber tires.

Myers' cushion tire store ladder and trolley complete $29.00

Track for Myers' cushion tire store ladder (complete with hangers). Per foot..... .40

Directions for Fitting Store Ladder.

Give us the exact height of the ceiling and the length of each track, and we will do all the fitting at the factory. If the height of the ceiling varies, give us the height of ceiling at each end and center of each run of track.

MOSSBERG WRENCHES

Demountable Rim Wrenches

"OWNER" Series

"All-steel" Demountable Rim Wrenches are designed actually for endurance and facility for work and are wholly guaranteed.

Nos.	Socket Size	Fits
361	5/8	Kelsey, Hays, Jackson, Mott.
362	11/16	Firestone, Goodrich.
363	3/4	Baker, Detroit, Firestone, Hays, Jackson, Mott, Perlman, Stanweld
364	13/16	Stanweld, United.
365	7/8	Firestone. This number also fits all Giant Pneumatic Tire Rims.

Construction: ½ inch Steel Bar Sockets of heavy special steel. End and center swivel-grip steel handles.
Finish: Burnished nickel.
Length: 14 inches.
Throw: 5¼ inches.
Packing: 6 of a size in a carton.
Shipping Weight: 6 wrenches, 10 pounds.
Each $1.10

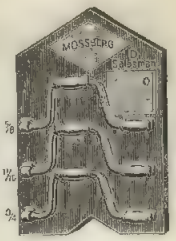
No. 660

Wheel Puller for Passenger Cars

The No. 660 has a free thrust bolt that enables the operator to tap the bolt head with a hammer in particularly difficult cases, with no injury to either hub threads or puller threads.
Fits: Ford and Chevrolet "490" hubs.
Construction: Heavy drawn steel with adjustable grip clamp strap for assured safety to threads.
Finish: Burnished nickel
Height: 3⅜ inches.
Packing: Individual cartons.
Shipping Weight: 25 ounces.
Each $1.50

No. "D" Salesman

Sales of any article depend upon their being properly displayed.
The "D" Display will automatically sell these Demountable Rim Wrenches if placed in a fair position. Filling stations, repair shops and garages are using them.
Wrench Description:
Construction: ½ inch Steel Bar. Sockets of heavy special steel, round shape for rim clearance. End and center swivel-grip steel handles.
Finish: Burnished nickel.
Length: 14 inches.
Throw: 5¼ inches.
Packing: Durable cartons.
Board Description:
Construction: Cabinet work—Selected Chestnut 1 inch. Steel Hooks, nickeled.
Finish: Natural grain with three coats of finish.
Size: 15 inches wide by 30 inches high. Easel back.
Shipping Weight: Board and assortment, 90 pounds.
Board Free with complete assortment.
This board can be ordered with all wrenches of any one size for car salesrooms and service stations.
*Note: No. 361 with ⅝ inch socket will fit most Ford demountable rims.



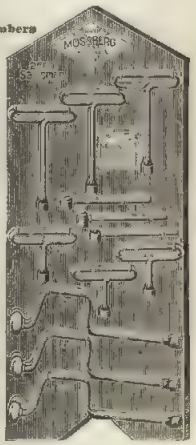
Quantity	Wrench No.	Fitting Size	Fits
12	361	⅝	Kelsey, Hays, Jackson, Mott.*
4	362	11/16	Firestone, Goodrich.
8	363	¾	Baker, Detroit, Firestone, Hays, Jackson, Mott, Perlman, Stanweld.

Each $26.40

No. 2500 Salesman

72 Wrenches—6 Each of 12 Numbers

Wrench Nos.	Socket Opening Size Hex. Inches	U. S. Standard Nuts and Bolt Heads. Bolt Size Inches	S. A. E. Standard Nuts and Screw Heads. Screw Size Inches	Hex. Head Cap Screws. Screw Size Inches
2133				
2233	½	¼	5/16	5/16
2333				
2433				
2137				
2237	9/16	...	⅜	⅜
2337				
2437				
2141				
2241	⅝	...	7/16	7/16
2341				
2441				



Board Specifications:
Cabinet Construction: Selected Chestnut 1 inch. Steel Hooks, nickeled.
Finish: Natural grain with three coats of finish.
Size: 20 inches wide by 30 inches high. Easel back.
Board Free with complete group.
For smaller stations, this group of wrenches represents the three most frequently used sizes of sockets in the four types of handles.
Construction: ½ inch Steel Bar. Sockets of heavy special steel, round shape for clearance.
Finish: Burnished nickel.
Packing: Heavy cartons.
Shipping Weight: Board and assortment, 113 pounds.
Each $44.00

MOSSBERG WRENCHES

No. 2400 Series
"All-Steel" Indestructible Speed Brace Wrenches

Mossberg Speed Braces are "all-steel" with sockets of steel especially made to resist twisting strains—the test of all wrenches.

Construction: ½ inch Steel Bar. Sockets of special steel of newest round shape, allowing minimum clearance but reinforced faces.

Finish: Burnished nickel.

Length: 19¼ inches.

Packing: Six of a size in a carton.

Shipping Weight: Six braces, 11¾ pounds.

Nos.	Socket Opening Size Hex. Inches	U. S. Standard Nuts and Bolt Heads. Bolt Size Inches	S. A. E. Standard Nuts and Screw Heads Screw Size Inches	Hex. Head Cap Screws Screw Size Inches
2429	7/16	..	¼	¼
2433	½	¼	5/16	5/16
2437	9/16	..	3/8	3/8
2439	19/32	5/16	..	..
2441	5/8	..	7/16	7/16
2445	11/16	3/8	..	..
2449	3/4	..	½	½
2451	25/32	7/16	..	..
2453	13/16	..	..	9/16
2457	7/8	½	9/16	5/8

Bar line sockets are marked with the short diameter of nuts, bolt heads, or screw heads. The marking does not include clearance which is actually there.

Each $0 80

No. 655
Universal Valve Spring Lifter

"Stays put" because the ratchet locks it in position.

Construction: High carbon steel.

Finish: Burnished nickel.

Length: 11½ inches over all.

Packing: 2 in each carton.

Shipping weight: 2 lifters, 2¼ pounds.

Each $1.50

No. 2800 Series
"Swivel-Joint" "Tee" Wrenches

No. 2800 Series make adjustments possible that otherwise would require disassembling of interfering parts.

Construction: ½ inch Heavy Steel Bar. Sockets of special steel.

Finish: Burnished nickel.

Length: 12 inches.

Wrench No.	FITS: Socket Opening Size Hex. Inches	U. S. Standard Nuts and Bolt Heads. Bolt Size Inches	S. A. E. Standard Nuts and Screw Heads. Screw Size Inches	Hex. Head Cap Screws. Screw Size Inches
2829	7/16	..	¼	¼
2833	½	¼	5/16	5/16
2837	9/16	..	3/8	3/8
2839	19/32	5/16	..	..
2841	5/8	..	7/16	7/16
2845	11/16	3/8	..	..
2849	3/4	..	½	½
2851	25/32	7/16	..	..
2853	13/16	..	..	9/16
2857	7/8	½	9/16	5/8

Packing: Six of a size in a carton.

Shipping Weight: Six wrenches, 10¾ pounds.

Each $1.50

No. 2300 Series
Steel Solid Socket Wrenches "Tee" Handle Type

Construction: ½ inch Steel Bar. Sockets of special analysis steel, round shape, allowing minimum clearance.

Finish: Burnished nickel.

Length: 12 inches.

Packing: Six of a size in a carton.

Shipping Weight: Six wrenches, 10 pounds.

Nos.	Socket Opening Size Hex. Inches	U. S. Standard Nuts and Bolt Heads. Bolt Size Inches	S. A. E. Standard Nuts and Screw Heads. Screw Size Inches	Hex. Head Cap Screws Screw Size Inches
2329	7/16	..	¼	¼
2333	½	¼	5/16	5/16
2337	9/16	..	3/8	3/8
2339	19/32	5/16	..	..
2341	5/8	..	7/16	7/16
2345	11/16	3/8	..	..
2349	3/4	..	½	½
2351	25/32	7/16	..	..
2353	13/16	..	..	9/16
2357	7/8	½	9/16	5/8

Each $0.60

No. 2100 Series
"All-Steel" Solid Offset Socket Wrenches

Construction: ½ inch Steel Bar. Sockets of special analysis steel, round shape, minimum clearance.

Finish: Burnished nickel

Length: 10 inches

Packing: Six of a size in a carton.

Shipping Weight: Six wrenches, 5 pounds

Nos.	Socket Opening Size Hex. Inches	U. S. Standard Nuts and Bolt Heads. Bolt Size Inches	S. A. E. Standard Nuts and Screw Heads Screw Size Inches	Hex. Head Cap Screws Screw Size Inches
2129	7/16	..	¼	¼
2133	½	¼	5/16	5/16
2137	9/16	..	3/8	3/8
2139	19/32	5/16	..	..
2141	5/8	..	7/16	7/16
2145	11/16	3/8	..	..
2149	3/4	..	½	½
2151	25/32	7/16	..	..
2153	13/16	..	..	9/16
2157	7/8	½	9/16	5/8

Each $0.48

MOSSBERG INTERCHANGEABLE SOCKET ACCESSORIES

No. 359

Speeder Type Handle for Interchangeable Sockets

A speeder handle for all interchangeable sockets and with these sockets, the handle produces speed brace wrenches of sizes from 5/16 to 1 9/32 inches.

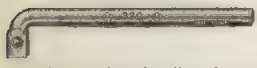
Construction: Special ½ inch Steel Bar.

Finish: Burnished nickel.
Length: 18¼ inches.
Packing: Six in a carton.
Shipping Weight: Six handles, 9½ pounds.

Each $0 75

No. 320

Offset Socket Wrench Handle



An offset socket handle of good length for leverage and overstrong for service.

Construction: Special ½ inch Steel Bar.

Finish: Burnished nickel.
Length: 10 inches.
Packing: Twelve in a carton.
Shipping Weight: Twelve wrenches, 7¾ pounds.

Each $0.27

No. 336

Universal Joint

A small unit but one that makes possible adjustments that otherwise would be impossible.
Allows use of extensions and handles that evade projections and objects in a direct line of work.

Fits: All standard sockets and units.
Finish: Burnished nickel.

Each $0.50

No. 331

Solid "Tee" Handle

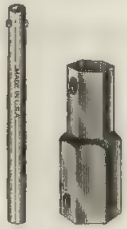
For equipment purposes, this solid "Tee" handle is ideal and has a large sale.

Construction: ½ inch Special Steel Bar.

Finish: Burnished nickel
Width: 7½ inches.
Length: 11 inches.
Packing: Six in a carton
Shipping Weight: Six handles, 9½ pounds.

Each $0 50

DOUBLE END SPARK PLUG WRENCHES



Spark Plug Wrenches to fit two sizes of body nuts are economical and provide the best way to work on hot spark plugs. In fact, this sort of wrench is the only type to completely protect the fragile porcelain of plugs.

No.	Length, Inches	Hex. Opening, Inches	
455	4	29/32	1-1/32
457	4	31/32	1-5/32

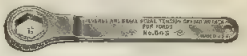
Construction: "All-steel" of special manufacture. Handles of 7/16 inch heavy bar.

Finish: Burnished nickel.
Length: Socket, 4 inches. Handle, 5½ inches.
Packing: One in a carton.
Shipping Weight: 10 ounces.

Each $0.43

No. 645—Ford

Ratchet Tension Spring Wrench for Reverse and Brake Pedal



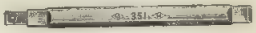
Does a hard job easily. A fast moving item because it is made just for this work.

Construction: Heavy steel with properly hardened ratchet and spring.
Finish: Burnished nickel.
Length: 6⅛ inches.
Packing: Twelve in a carton.
Shipping Weight: Twelve wrenches, 2⅞ pounds.

Each $0.50

No. 351

Extension Bar



A good extension bar in socket work is absolutely essential to reach out-of-the-way places and to employ universal joints and other helpful units.

Construction: Steel tube
Finish: Burnished nickel.
Length: 9½ inches.
Packing: Twelve in a carton.
Shipping Weight: Twelve bars, 8¼ pounds.

Each $0.55

No. 355

Ratchet Handle

The No. 355 is a "junior" handle—built to do the work under all conditions.

Construction: Heavy steel sheet.
Finish: Burnished nickel
Length: 8 inches.
Packing: One in a carton.
Shipping Weight: 11 ounces.

Each $1.00

No. 350

Reversible Ratchet Handle

The No. 350 is the reversible ratchet handle that is responsible for the general adoption of interchangeable sockets.
It is light in weight, of good lev erage and strong beyond all needs.

Construction: Heavy steel sheet.
Finish: Buffed nickel.
Length: 10 inches.
Packing: One in a carton.
Shipping Weight: 18 ounces.

Each $2.00

WOOD SAW BLADES

Sharpened and Set.

Nos. 17 and 017.

No. 33.

No. 17—Buhl Extra, 2¼ inch Round Breasted Bright **Sheffield** Special Steel Thin Back Blade, Plain V Tooth, ½ inch Teeth or **Three Points** to the inch, 30 inches long ..... Per Dozen, $11.70

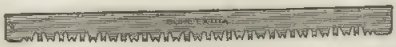
No. 017—Buhl Extra, 2¼ in., Round Breasted Bright Tool Steel Blade, 19x21 Gauge. Plain V Tooth. **5 Points** to the inch, 30 inches long.....Per Dozen, 9.90

No. 31—2 inch Breasted Bright Cast Steel Blade, Plain V Tooth, **5 Points** to the inch, 30 inches long ..... Per Dozen, 7.12

No. 23—Buhl Extra, 2¼ inch Round Breasted Bright **Sheffield** Special Steel Thin Back Blade, 19x21 Gauge, **Tuttle Tooth,** 30 inches long.....Per Dozen, 11.70

No. 42—2 inch Straight Flat Ground Cast Steel Blade, **Tuttle Tooth,** 30 inches long..... .Per Dozen, 9.00

Packed—Half Dozen in a Paper Envelope



No. 37.

No. 87—Buhl Extra, 2¼ inch Round Breasted Bright Tool Steel Blade, 19x21 Gauge, Special Tuttle Tooth, **Very Coarse,** 30 inches long.....Per Dozen, $11.70

Packed—Half Dozen in a Paper Envelope

WOOD SAW RODS

No. 11.

No. 11—Clipper Saw Rods, Heavy Malleable Nuts, Length 22 inches.....Per Dozen, $2.50

Packed—One Dozen in a Package.

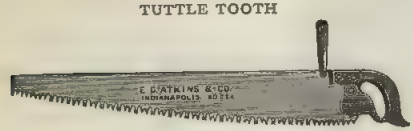
No. 5.

No. 5—Jumbo Saw Rods, Extra Heavy, Tinned Rod and Loops, Japanned Nuts, Length 22 in..Per Dozen, $3.30

Packed—One Dozen in a Package

ONE MAN CROSS CUT SAWS

TUTTLE TOOTH



No. 380.

Atkins' Tuttle Tooth, Special Steel.

No. 300—Feet	3½	4	4½
Each	$5.60	6.30	7.10

"Standard" Tuttle Tooth.

No. 490—Feet	3½	4	4½
Each	$4.80	5.40	6.10

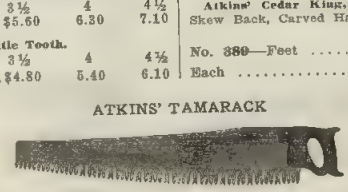
CEDAR KING

No. 389.

Atkins' Cedar King, Rex Pattern Tooth, Special Steel, Skew Back, Carved Handle.

No. 380—Feet	3½	4	4½
Each	$7.60	8.60	9.50

ATKINS' TAMARACK



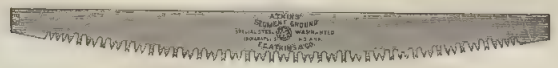
No. 741.

Atkins' Extra Heavy Gauge. Taper ground. Lance tooth perforated hold, for use with heavy gloves. Silver Steel. Three Brass Screws. Perfection shape rakers. Extra large hand

Length, feet	3½	4	4½
No. 741—One Man Saw.....Each,	$8.50	9.50	10.60

CROSS CUT SAWS

ATKINS THIN BACK

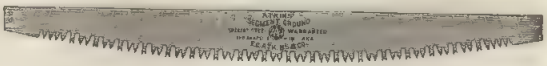


No. 331.

Atkins Thin Back Tuttle Tooth, Special Steel, 14 Gauge on Tooth Edge, 18 Gauge on Back Edge.

Length, feet		5	5½	6
No. 331—14x18 Gauge	Each,	$7.60	8.30	9.10

ATKINS THIN BACK



No. 332.

Atkins Thin Back Tuttle Tooth, Special Steel, 14 Gauge on Tooth Edge, 19 Gauge on Back Edge.

Length, feet		5	5½	6
No. 332—14x19 Gauge	Each,	$8.10	9.00	9.80

ATKINS REX

No. 1.

Atkins Rex, Pennsylvania Pattern, Silver Steel, **Segment** Ground, 14 Gauge on Tooth Edge, 17 Gauge on Ends on Back Edge, 20 Gauge at Center on Back Edge.

Length, feet		5	5½	6
No. 1—14x20 Gauge	Each,	$10.00	11.80	13.60

ATKINS HOLLOW BACK

No. 379.

Atkins Hollow Back, Tuttle Tooth, High Grade Special Steel.

Length, feet		5	5½	6
No. 379—3¼ inches wide	Each,	$4.40	4.80	5.20

ATKINS TENON SAWS

No. 337.

Atkins Common V Tooth Tenon Saws, Special Steel, 14 Gauge on Tooth Edge, 16 Gauge on Back Edge.

Length, feet		4	4½	5
No. 337—14x16 Gauge	Each,	$5.20	5.90	6.60

Note—Prices on Cross Cut Saws do not include handles.

SOLID TOOTH CIRCULAR SAWS

"Special" Circular Cross Cut or Cord Wood Saws

Diameter Inches	Thickness Gauge	Size of Hole Inches	Teeth in Saw	Each
24	11	1¼	64	$20.50
26	11	1¼	66	24.00
28	10	1⅜	68	28.00
30	10	1⅜	70	32.00

Extra—For Reaming Arbor holes larger than standard...$.....
For Bushing holes smaller than standard ....

Cross Cut.

Rip Saw.

Atkins Circular Saws

Solid Tooth, Silver Steel, patent ground and tempered, quality and workmanship unequaled.

Prices Quoted on Application.

Diameter Inches	Thickness Gauge	Size of Hole Inches	Price, Each	Extra for Each Gauge Heavier	Beveling New Saws Per Gauge
6	18	¾	$ 3.30	$0.07	$0.25
8	18	⅞	4.40	.10	.35
10	16	1	5.60	.20	.45
12	15	1	7.00	.30	.55
14	14	1⅛	8.50	.40	.65
16	14	1⅛	10.50	.50	.75
18	13	1¼	12.50	.60	.90
20	13	1⅝	15.00	.75	1.05
22	12	1⅝	17.50	.90	1.20
24	11	1⅝	20.50	1.05	1.35
26	11	1⅜	24.00	1.25	1.55
28	10	1⅛	28.00	1.50	1.75
30	10	1⅛	32.00	1.75	1.95
32	10	1⅝	36.50	2.00	2.15
34	9	1⅝	41.00	2.25	2.35
36	9	1⅝	47.00	2.60	2.55
38	9	1⅝	54.00	3.00	2.75
40	9	2	62.00	3.40	2.95
42	8	2	71.00	3.80	3.25
44	8	2	83.00	4.40	3.55
46	8	2	98.00	5.15	3.85
48	8	2	112.00	5.90	4.15
50	7	2	127.00	6.65	4.45
52	7	2	142.00	7.40	4.80
54	7	2	157.00	8.80	5.15
56	7	2	180.00	10.25	5.50
58	7	2	200.00	11.75	5.95
60	6	2	224 00	13.25	6.40
62	6	2	250.00	14.75	6.85
64	6	2	280.00	17.60	7.35
66	6	2	310.00	22.00	7.85
68	5	2	350.00	26.40	8.45
70	5	2	400.00	30.80	9.05
72	5	2	450.00	35.20	9.65
74	5	2	510.00	39.60	10.30
76	5	2	575.00	44.00	11.00
78	5	2	690.00	49.35	11.85
80	5	2	810.00	55.75	12.90
82	5	2	940.00	63.05	14.10
84	5	2	1,075.00	70.40	15.40

Note—All saws under 6 inches in diameter take list of 6-inch saw.
All saws filed and set, ready for use.
All saws of odd diameters take list of next larger size.
No extra charge for saws one gauge thicker than list. No extra charge for saws one to three gauges thinner than list; when more than three gauges thinner, add 5% for each gauge.
Saws 48 inches and under, and 62 inches and over, in diameter, more than two gauges thinner than list not warranted. Saws 50 inches to 60 inches in diameter thinner than 10 gauge not warranted.
Saws 42 inches or less in diameter beveled one gauge without extra charge; 44 inches or larger beveled two gauges without extra charge. Saws hollow or concave ground add for each additional gauge hollow or concave ground double the list for beveling.
Saws for cutting Bone, Horn or Ivory, add 50% to the above list. When these saws are hollow or bevel ground the 50% advance is to apply only on the list of straight gauge saw, and not on extras for hollow or bevel grinding.

The Pittsburg Boiler & Machine Company

PITTSBURG, KANSAS

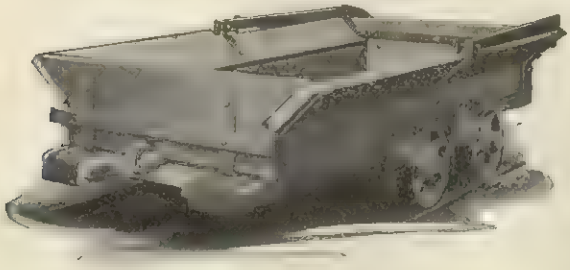
Manufacturers of

Coal Mine Equipment

Mine Cars

A Mine Car is no better than its Trucks.

Our Hyatt Roller Bearing is characterized by its proven design, affording minimum draw bar pull. Numerous comparative tests have demonstrated an average reduction of 50% in draw bar pull in favor of Roller Bearings.



The Full Floating Axle insures uniform wear on bearing plates.

The wheels are of high grade, close grain, tough grey iron, mixed by analysis—not guess, and are machined and finished to a perfect fit. Treads and Flanges are chilled to approximately one half the thickness of the iron.

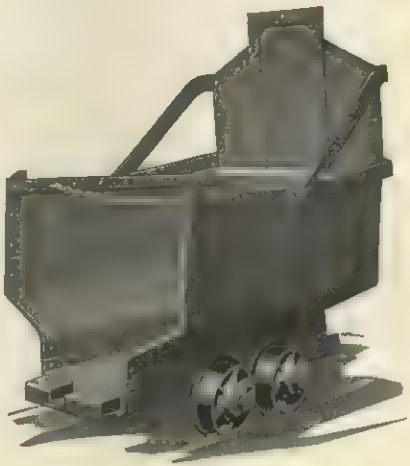
Mine Cars for either surface or underground uses, built by us with 6″, 8″, 10″, 11″, 12″, 14″, 16″ or 18″ wheels, plain and roller bearings, with wood or steel bodies.

Tipples

We design, manufacture and build Steel and Wood Tipples, equipped with Incline or Horizontal Screens, Loading Booms, Picking Tables and Conveyors to meet all requirements for screening and cleaning coal.

Manufacturing

Boilers
Mine Cars—Wood and Steel
Car Trucks—Plain and Roller Bearing
Car Dumps
Shaker Screens—Horizontal and Incline
Mine Cages
Mine Fans—24″ to 15′-0″
Hoists—Single and Double Drum
Sheave Wheels
Rail Benders
Frogs and Switches
Tipple Equipment
Pressure Tanks
Storage Tanks
Conveyors
Weigh Pans
Sand Driers
Loading Booms
Picking Tables
Coal Crushers



Expert Advice and Estimates Are Free for the Asking.

PRESSED STEEL CAR COMPANY

General Offices: Farmers Bank Bldg., PITTSBURGH, PA.

WORKS
McKees Rocks, Pa. Hegewisch, Ill.
N. S., Pittsburgh, Pa.

SALES OFFICES
New York Chicago
Pittsburgh St. Paul

Builders of

Mine and Railroad Cars

Advantages of Steel Mine Cars

Greater strength as compared to wood cars.

Greater capacity within limiting dimensions.

Less number of cars required for a given output, as fewer cars are out of service on account of repairs.

Less expensive on account of longer life.

Types Built

The Pressed Steel Car Company, on account of its long experience in building mine cars and its enormous output is in position to build **Steel, Composite** and **Wood** Mine Cars of any design that may be desired for either the bituminous or anthracite fields.

Service

We are always ready and glad to send a representative to go into the question of designs with mine operators, or we can furnish prepared blue prints of standard designs showing cars in operation. Or, upon receipt of detailed descriptions of the cars desired, limiting dimensions and conditions under which the cars are to work, we can make layouts to suit your individual requirements.

Low Side All-Steel Mine Car

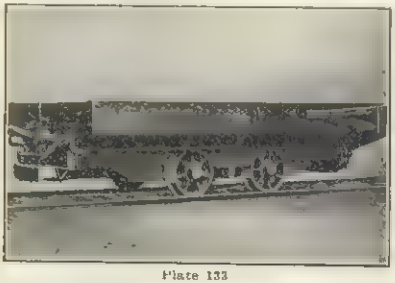


Plate 133

High Side Steel Mine Car With Wood Floor

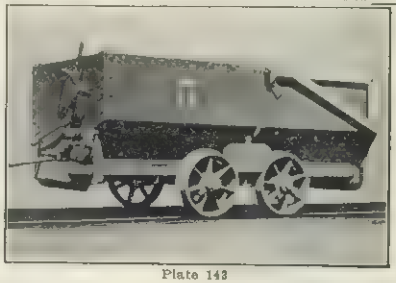


Plate 143

Low Side Steel Mine Car With Wood Floor

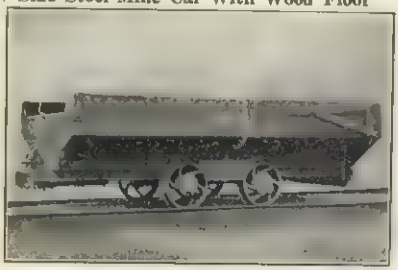


Plate 135

High Side Steel Mine Car With Wood Floor

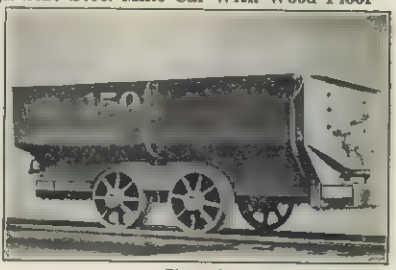


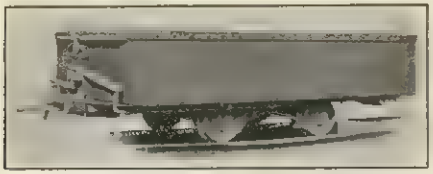
Plate 136

Mine cars constructed of pressed or structural steel shapes have the advantage over the old type wooden cars on account of their light weight, increased cubical capacity and long life. Mine cars constructed by this company are designed by experienced engineers to overcome the individual car troubles of the coal operators, and are built of high grade material and by careful workmen, thus assuring the user of proper dividends on the money invested for rolling equipment.

A large number of these cars have been manufactured for both the bituminous and anthracite fields. The designs illustrated have been built for a large number of mining companies. While no particular radical departure in the method of transportation is effected, a car with large cubical contents in proportion to external dimensions is gained, and the construction of steel plates and shapes gives a car which offers great resistance to shocks and accidents.

KOPPEL Owners and Operators of Koppel Industrial Car & Equipment Co. Manufacturers of Industrial Cars, Portable Track, Etc. KOPPEL

Low Side Steel Mine Car With Wood Floor



Capacity (level) 104 cu. ft. Light Weight: 4400 lbs.

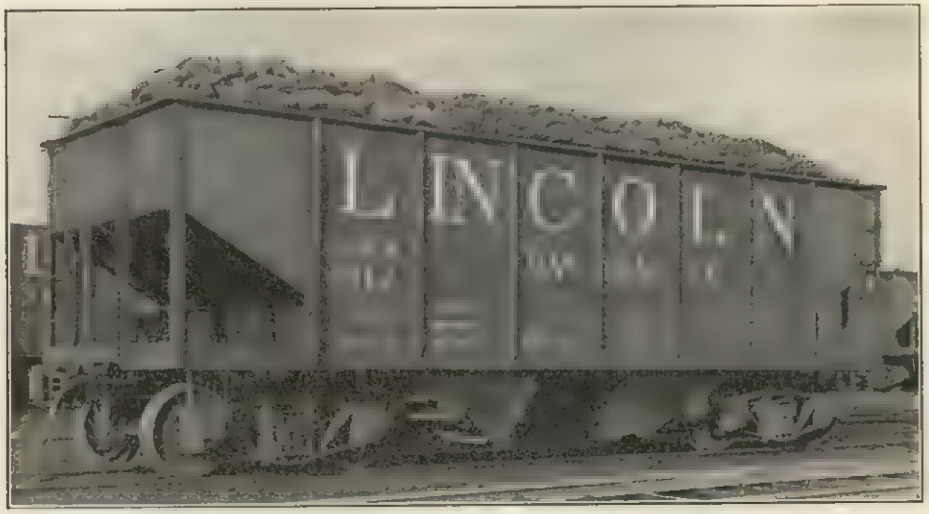
The above illustration represents the latest type of mine car designed and built by this company to meet the operating conditions of one of the large coal mines in the Pennsylvania Bituminous Field. This car is equipped with a coupling arrangement suitable for unloading the car in a rotary dump without being uncoupled from other cars in the same train. The car is of a large cubical capacity, but low and compact.

Low Side Steel Mine Car

Capacity (level) 64 cu. ft. Light Weight: 2615 lbs.

The above illustration represents one of several hundred low side composite mine cars built by this company. The body of the car embodies flat and pressed steel plates and pressed angles. The lower flanges of the sides and rigid end are securely bolted to the heavy wood flooring. Heavy pressed steel bumpers at both ends of the car are securely bolted to the wood flooring, protecting same from damage when cars are coupled together.

55-Ton Capacity All-Steel Hopper Coal Car



We have large plants in both the Pittsburgh and Chicago Districts for building Steel and Composite Coal Cars for standard gauge railroad service, ranging from 50 to 120 tons capacity. The above illustration shows an all-steel coal car of 55-tons capacity, which is the standard car of this capacity for coal trade. In order to meet the demand for cars for prompt delivery during the rush periods in the coal industry, we carry a number of cars of this type in stock and can make shipment of these cars within a few days after receipt of order. We have furnished cars of this type to a number of the large coal companies and would be glad to supply complete details as to construction, together with price, to any company interested in securing this class of equipment.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

"Reinforced Plate," or an Extra Deposit of Silver, where the Most Wear Comes

LA FRANCE

Gray or Bright Finish

Heavy Plate

Dessert Forks
12 in unlined box, $7.50 dozen

Medium Forks
12 in unlined box, $7.92 dozen

Tea Spoons
12 in unlined box
$3.96 dozen

Dessert Spoons
12 in unlined box $7.40 dozen

Table Spoons
12 in unlined box, $7.92 dozen

Triple Plate

Medium Knives or Forks, Hollow Handle	$23.40 doz.
No. 50 Medium Knives, Hollow Handle, Stainless Steel Blade	27.26 "
Dessert Knives or Forks, Hollow Handle	22.88 "
No. 51 Dessert Knives, Hollow Handle, Stainless Steel Blade	26.64 "
Breakfast Knives, Hollow Handle Packed 6 in lined box	23.10 "

Medium Knives or Forks, Solid Handle	$9.58 doz.
No. 42 Medium Knives, Solid Handle, Stainless Steel French Blade	17.16 "
No. 72 Medium Knives, Solid Handle, Stainless Steel Cimeter Blade	16.64 "
Dessert Knives, Solid Handle	9.36 "
Breakfast Knives, Solid Handle, Cimeter and Swaged Packed 6 in unlined box	9.68 "

Illustrations actual size. Dessert Knives shown

H6

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

LA FRANCE

Fruit Knife
Solid Steel, Triple Plated, set of six $3.76
Solid Steel, Triple Plated, Plain, set of six, $3.64

Cray or Bright Finish

Ice Tea Spoon
Packed 12 in un ined box per doz , $7.28
Extra Plate

Butter Knife
Packed 12 in enamel box, per doz , $7.32
Packed 1 in lined box, ... " 9.48
Extra Plate

Butter Spreader
Extra Plate, set of six, $4.64

Sugar Shell
Packed 12 in unlined box, per doz , $7.56
Packed 1 in lined box " " 9.96
Extra Plate
No. 133 Set, Butter Knife and Sugar Shell in lined box per set, $1.63

Orange Spoon
Extra Plate, set of six, $3.34

Individual Salad Fork
Extra Plate, set of six, $5.20

Soup Spoon
Packed 6 in lined box, set of six, $4.28
Packed 12 in unlined box, per doz., $7.92
Extra Plate

Cold Meat Fork, Large
Extra Plate, each, $1.33

Ladles

Cream,	Extra Plate, each,	$1.24		
Gravy,	"	"	"	1.66
Oyster	"	"	"	3.58
Medium,	"	"	"	4.40

Bouillon Spoon
Extra Plate, set of six, $4.64

Tomato Server
Extra Plate, each, $2.20

Berry Spoon
Extra Plate, each, $2.20

Sugar Tongs
Extra Plate, each, $1.66

Pie Server, Hollow Handle
Each, $4.56

Pickle Fork, Long
Extra Plate, each, $1.24

Oyster Fork
Extra Plate, set of six, $3.44

One-half size

Illustrations of sets, about one-fourth actual size

No. 500 Set, in blue lined gift box, $8.74
6 Solid Handle Medium Knives and 6 Flat Handle Medium Forks
No. 504 Dessert Knives and Forks, $8.44
No. 500/4 with No. 42 Stainless Steel Knives, $12.80
No. 500/7 with No. 72 Stainless Steel Knives, 12.28

No. 10 Child's Set, in blue lined gift box, $3.50
Child's Hollow Handle Knife, Flat Fork and Spoon

All Fancy Pieces in Blue Lined Gift Boxes

No. 702 Set, in blue lined gift box, $15.92
6 Hollow Handle Medium Knives and 6 Flat Forks
No. 703 Dessert Knives and Forks, $15.30

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

LA FRANCE

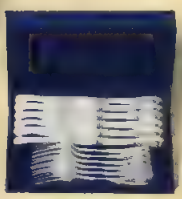
Gray or Bright Finish

No. 785 Case, 26 pieces $29.25
"Elite" Blue Leatherette Case Blue Velvet Lined to match. Knives fit in cover. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Medium Knives, Hollow Handle, 1 Butter Knife, 1 Sugar Shell.

No. 784, same as above, with Solid Handle Knives, $22.06

No. 789, 35 pieces in above case $2.76
12 Tea Spoons, 6 Dessert Spoons, 3 Table Spoons, 6 Medium Forks, 6 Medium Knives, Hollow Handle, 1 Butter Knife, 1 Sugar Shell

No. 788, same as above, with Solid Handle Knives, $25.88



No. 728 Set, 72 pieces $56.54
Blue Leatherette Telescope Box. Blue Lined. Contains 6 Hollow Handle Medium Knives and 6 Flat Handle Medium Forks.

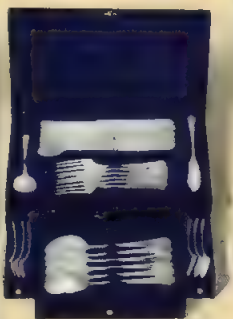
No. 727, same as above, but with Solid Handle Knives $50.46

No. 740 Case, 26 pieces ... $18.52
Blue Leatherette Compact Case Blue Velvet Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Solid Handle Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell

No. 741, same as above, with Hollow Handle Knives $23.48

No. 794 Chest, 40 pieces ... $43.90
High Grade Mahogany Finish Chest Blue Velvet Lined. Knives go in rack in cover. Contains 6 Solid Handle Dessert Knives, 6 Medium Forks, 6 Individual Salad Forks, 6 Tea Spoons, 6 Dessert Spoons, 3 Table Spoons, 1 Sugar Shell, 1 Butter Knife, 1 Berry Spoon, 1 Cold Meat Fork, 1 Long Pickle Fork, 1 Gravy Ladle, 1 Cream Ladle.

No. 795, same as above, but with Hollow Handle Knives ... $60.96



No. 731 Chest, 26 pieces $18.52
Blue Leatherette Compartment Drawer Chest. Blue Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Medium Knives, Solid Handle, 1 Butter Knife, 1 Sugar Shell.

No. 732, same, but with Hollow Handle Knives $35.48

Illustrations about one fifth actual size

No. 797 Chest, 72 pieces ... $89.04
Solid Mahogany Chest with Brass Fittings. Blue Velvet Lined. Knife Rack Removable. Contains 6 Hollow Handle Medium Knives, 6 Hollow Handle Dessert Knives, 6 Medium Forks, 6 Dessert Forks, 6 Table Spoons, 6 Dessert Spoons, 12 Tea Spoons, 6 Butter Spreaders, 6 Bouillon Spoons, 6 Individual Salad Forks, 1 Butter Knife, 1 Sugar Shell, 1 Cold Meat Fork, 1 Berry Spoon, 1 Gravy Ladle, 1 Cream Ladle.

No. 796, same as above, with Solid Handle Knives, $75.30

INTERNATIONAL SILVER CO.

Another Triumph For

Press and Public

3

Read What the Critics Say !

"A work of art. It reveals Mr. Lubitsch as a talented stylist in direction; a producer who makes the most of every detail and whose work scintillates with original ideas."
Mordaunt Hall, N. Y. Times

"Ernst Lubitsch has drawn a vivid picture. And what imagination has Lubitsch!"
Harriette Underhill, N. Y. Herald

"Ernst Lubitsch has scored another triumph for Warner Bros. in 'Three Women.' Again his masterful direction and subtle touches are evident."
N. Y. Morn. Telegraph

"'Three Women' comes pretty close to the top of recent productions. It is directed with a deftness and sureness that makes every Lubitsch production a delight."
—Louella O. Parsons, N. Y. American

"'Three Women' is a picture you'll like. Lubitsch's little neat touches make the picture breathe."
Mildred Spain, N. Y. Daily News

"Lubitsch has told his story with a suavity and directness that disregards the obvious."
—Rose Pelswick, N. Y. Journal

"Another triumph for Ernst Lubitsch."
—N. Y. Evening World

"Seldom do we see such good acting as is done in 'Three Women.' Ernst Lubitsch has done one of the best pieces of directing in his career."
—N. Y. Evening Post

"'Three Women' is a stirring and powerful photoplay. Subtitles are few and far between when Lubitsch works."
—N. Y. Sun

"Ernst Lubitsch's directing is evident in many little subtle touches such as no one but Lubitsch seems to think of."
N. Y. Eve. Graphic

Premier Presentations at—

Mark Strand	~ New York City
Criterion	~ Los Angeles
California	~ San Francisco
Modern & Beacon	~ Boston
Liberty	~ Kansas City
Circle	~ Cleveland
Capitol	~ Detroit
Walnut	~ Cincinnati
New Grand Central	~ St. Louis
Strand	~ New Orleans
Howard	~ Atlanta
Rialto	~ Washington
Stanley	~ Philadelphia
Capitol	~ St. Paul

The Art of Lubitsch!

Applaud Mark Strand's New York Showing of

WARNER BROS.
Classics of the Screen

"Women"

MAY McAVOY
MARIE PREVOST
PAULINE FREDERICK
with LEW CODY

and an all-star cast including
Willard Louis, Mary Carr, Pierre Gendron

DIRECTED BY

ERNST LUBITSCH

Hear, hear!

What a Hard-Boiled Showman says –

"Audience wild about it."
"Sure-fire comedy."
"I would like to be assured of all his pictures."

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT — GEORGE W. E. ATKINS, VICE PRESIDENT

CLASS OF SERVICE | SYMBOL
Day Message | —
Day Letter | —
Night Message | Nite
Night Letter | N L

RECEIVED AT

Seattle, Wash. August 30, 1924.

J. S. Woody,
Associated Exhibitors, Inc., 35 W. 45th St., New York.

"NEVER SAY DIE" OPENED HERE TODAY TO CAPACITY AND AUDIENCE SURE WILD ABOUT IT. YOU ARE RIGHT. DOUGLAS MACLEAN IN "NEVER SAY DIE" IS SURE-FIRE COMEDY. I WOULD LIKE TO BE ASSURED OF ALL HIS PICTURES.

John Hamrick, Owner and Manager.
Blue Mouse Theatre.

Naturally!

Douglas MacLean

in "Never Say Die"

FROM WILLIAM COLLIER'S GREATEST STAGE COMEDY

RELEASED AUGUST 31ST
BY
ASSOCIATED EXHIBITORS
ARTHUR S. KANE PRESIDENT

PHYSICAL DISTRIBUTOR, PATHE EXCHANGE INC.
FOREIGN REPRESENTATIVE, SIDNEY GARRETT

The Exhibitors Round Table

St. Louis Music Suit

The Irving Berlin, Inc., has filed suit in the United States District Court in St. Louis, asking $250 damages of the management of the Excursion steamer Golden Eagle, plying the Mississippi River out of St Louis, alleging that on the night of July 26 the orchestra of the steamer played "That Old Gang of Mine" without paying proper tribute in coin of the realm to the plaintiff, which company holds the copyright to the song. The Eagle Packet Company, Inc., is named defendent in the bill of complaint filed by Anthony O'Hallaran attorney for the Society of Authors and Composers in the St Louis district.

The petition charges that on the night in question the steamboat management "gave a public performance, not for a charitable or educational purpose, but for entertainment of patrons of the Eagle Packet Company," and further "that the wrongful public performance and presentation of 'That Old Gang of Mine' attracted many persons to the defendant's boat and that the defendant threatens to continue the unlawful and wrongful performance of 'That Old Gang of Mine' and that the damage sustained has been and cannot be estimated at a minimum sum of $250

* * *

D. R. Faunce Goes Ahead

The appointment of D. Roscoe Faunce, former manager of the Criterion Theatre in Oklahoma City, Oklahoma, to manage the Strand and the Galax Theatres, property of Birmingham Enterprises, has been announced

Mr Faunce succeeds Lloyd Towns who has resigned the management of the theatres to enter the real estate business

* * *

Newspaper Tie-Up

One of the most remarkable of newspaper co-operative stunts ever staged in Canada with a moving picture theatre was that which was conducted by the Edmonton Journal for the presentation of a special film release at the Empress Theatre, Edmonton, Alberta, the manager of which is Frank Robson, brother of Clarence Robson, Toronto, general manager of theatres for Famous Players Canadian Corp. The newspaper conducted an 'Own Your Home Week" and a feature of the celebration was the showing of "The Great Idea", a special topical film release of appropriate nature, at the Empress Theatre.

The Edmonton Journal published a special section of no less than 12 pages on each of which there was a large flare line or other announcement regarding the picture at the theatre. "The Great Idea" was screened in conjunction with the regular programme. The newspaper edition carried the advertising of all local firms interested in house building or home furnishing.

* * *

New Buffalo Zone Office

J H Michael chairman of Buffalo Zone, M P T O of N Y, announces that headquarters of the organization have been opened at 71 Root building, Chippewa and Franklin streets. Mr. Michael urges all members to make this office their headquarters while in town

Miss Marian Gueth has been engaged as a secretary for the office. Any exhibitor troubles will be turned over to this office. The board of trustees of the zone have decided on the following plans of dues: Theatres in towns with population up to 2500, regardless of number of seats $12 a year; population, 2501 to 5000, $25 annually; population, 5000, to 10,000, five cents a seat; 10,000 to 25,000 seven and one-half cents a seat over 25,000 ten cents a seat. A. E. Hayman, treasurer of the state body, declares that this system will not work hardship on the smallest exhibitor

* * *

Atlanta Agreement

Stage hands in the Atlanta theatres have signed a new agreement upon the same terms as last year. Loew's Grand had previously signed a new agreement, independently of the other theatres in the city, but all other theatres sat in together for an adjustment of all differences

* * *

Miss Shulsinger Dead

The St. Louis motion picture colony was grieved to learn of the death on September 26, at Lake Placid, N Y., of Miss Rose Shulsinger, former St. Louis newspaper writer and later publicity director in New York for various motion picture stars and film companies. Her first newspaper work was in St. Louis some ten years ago. Later she went to New York and accepted the post of press agent for Marion Davies. After that she was associated with Famous Players-Lasky Corporation. News of her death was brought to St. Louis by Fannie Hurst, well known author, who is visiting with her parents in this city. Miss Hurst's mother is seriously ill which brought her here at this time

* * *

Wolfe a Dog Fancier

Ernest J. Wolfe, of Lowville, N. Y., a well known exhibitor in the northern part of the state, is dividing his interests these days between his theatre and a notable kennel of Great Danes. Mr Wolfe purchased two Danes last week one of which was featured with Robert Dix in the motion picture play "Manhattan."

* * *

Monte Bain Promoted

Of interest to the film and theatre fraternity of the entire southeastern territory throughout which he is widely and favorably known, is the announcement made by D. Monte Bain of Wilmington, North Carolina that he will on or about November first become affiliated with the rapidly expanding chain of theatres being operated by S. S. Stevenson and associates of Henderson, North Carolina in the capacity of general director of exploitation and publicity for all the theatres in the chain.

Mr Bain for the past ten years has been in exclusive charge of all buying, booking and exploitation for the Howard-Wells theatres in Wilmington, North Carolina, and has literally grown up with this pioneer firm of motion picture people since the days of the Nickelodeon, although still a young man

He has for these years been the right hand man of Percy W. Wells who was for eight years president of the North Carolina Motion Picture Theatre Owners, and through this association has gained a wide knowledge of every branch of the show game, both legitimate and pictures

At the present time he is in active management of all their Wilmington theatres handling pictures, road shows and vaudeville in their various houses

Previous to his coming to the show game Mr. Bain had an experience of nine years in the newspaper game, in Wilmington, on North Carolina's oldest daily newspaper, the "Wilmington Star," having started on that newspaper at the age of sixteen

Expertness in presentation is evidenced by this scene of a ship's hold, designed as a prologue for the recent showing of First National's "The Sea Hawk," at the Brooklyn (N Y.) Mark-Strand Theatre, arrangement by Managing Director Edw. L Hyman.

Fashion Show

The big fall fashion show which Manager Vincent R. McFaul staged at Shea's Hippodrome, Buffalo, the past week with the aid of the Hengerer department store was one of the most successful events ever presented at the Hipp from a box office viewpoint. Over $50,000 worth of gowns were shown on live models against an ever changing scenic background. Dance numbers were interspersed. The symphony orchestra played.

* * *

Baseball Tie-Up

Manager W. J. Stewart of the Tivoli Theatre, a Toronto downtown theatre, made an interesting tie-up with the World's Baseball Series at New York and Washington by distributing Spalding baseballs which had been autographed by prominent ball players at matinee performances during the period of the series. Six baseballs were distributed by means of numbered tickets each afternoon, the stunt being arranged to advertise the news bulletin service which was employed to announce the games at the Tivoli. The baseballs were displayed in the window of the Spalding Toronto store with appropriate announcement cards.

* * *

Perrin Is Satisfied

When Oscar Perrin manager of the [illegible] Albany N. Y. has never had any complaint over the size of his crowds, things got the best of him one night last week, necessitating the calling of two policemen to the theatre. It occurred during the run of "The Sea Hawk," which incidentally broke the house records. Mr. Perrin announced that no more tickets would be sold at the box office about 8:30 o'clock. The crowd in line refused to disperse however, and began shoving and pushing. Realizing that the crowd would soon become unmanageable with disorder imminent, Mr. Perrin summoned the police.

* * *

Morning Showings

When a picture draws unusually well and booking arrangements make it inconvenient for a two-weeks' run, there's a way out of it, as was demonstrated by Frank L. Newman of the Newman theatre, Kansas City, last week. "Feet of Clay," a Paramount production, gave all advance indications of a "packer." Whereupon Mr. Newman promptly announced through daily newspapers and his screen that two morning performances, at half the regular admission price of 50 cents, would be shown, beginning Monday. The forenoon shows were at 9:15 o'clock and 11:20 o'clock and they did a big business, according to the Newman management.

* * *

Straw Votes

The Orpheum theatre, Kansas City, adopted a rather old, but still timely, method of exploitation this week. Each person received a presidential ballot with his ticket, which he marked and deposited in the lobby. The result of the "voting" was posted in the lobby each day. The stunt was worth a story in daily newspapers and attracted curious persons to the lobby, many of whom eventually entered the theatre, who otherwise would not have come.

* * *

Newman a Golfer

Not all of Frank L. Newman's ability lies in the operation of a theatre. Last week Mr. Newman won the consolation flight of the club championship golf tournament at the Oakwood Golf Club. And many of the best golfers in the city were in that tournament. He defeated Dave Werby, 4 and 3.

* * *

Formal Opening for Majestic

Remodeled and newly decorated, Joe Goldberg's Majestic Theatre, in Clarksville, Tennessee, had its big formal opening on Thursday, September 25 just one more achievement to the credit of one of Tennessee's most energetic exhibitors.

Mr. Goldberg, now owner of the newly equipped and beautifully remodeled Majestic is one of the best liked exhibitors in the state of Tennessee. [illegible] opening of the Majestic in Clarksville signified the esteem in which he is held in Tennessee, since he has only recently recovered from a long and severe illness.

Mose Klein will be managing director of the new house most ably assisted by Ralph Goldberg, son of its owner. Mr. Klein at first managed the Lillian, another Goldberg house. Young Mr. Goldberg though only recently graduated from high school is auditor of the Goldberg Amusement Company.

* * *

Buell Risinger Ill

Buell B. Risinger, conductor of the Howard Theatre orchestra, Atlanta, is confined to his room [illegible] Peachtree St. [illegible] with a severe illness. He was stricken [illegible] down. For several days his condition has been very alarming to his many friends there, but he is now out of danger and is taking a prolonged rest cure prescribed by his physician.

* * *

Crescent Adds Three More

Tony Sudekum, of the Crescent Amusement Company has added three more houses to his already long string in Kentucky, Tennessee and Alabama. The new additions are the Howard theatre, Lebanon, Tennessee, formerly operated by Mr. Hatcher, and the Gay and Temple Theatres, Harriman, Tennessee, bought from A. G. Jenkins.

* * *

Schenectady Depression

The situation in Schenectady, N. Y., from the standpoint of the motion picture theatres in that city offers little encouragement for the winter months. Many of the larger manufacturing concerns of the city are laying off men and as a direct result the theatres are complaining of poor business at a time when it should be of the best.

Owners of theatres in that city declare that those who are still working at the manufacturing establishments are afraid of being laid off and are not attending the theatres with any degree of regularity while those who are out of work are contenting themselves with the radio as a means of entertainment.

* * *

Play for Turkey Dinner

Bowling teams from the Troy and American theatres in Troy, N. Y., are rolling a series of games and the loser will pay for a turkey supper. Up to the present time, the American team is ahead. Walter Roberts, manager of the Troy theatre, is captain of one team, while Ben Apple owner of the American theatre, heads the other.

* * *

New Zone Offices

Elaborately furnished in mahogany and with every available spot filled with flowers the new headquarters of Buffalo Zone, Motion Picture Theatre Owners of New York, was opened on Monday, October 13. The office was filled with exhibitors all day.

J. H. Michael, chairman of Buffalo Zone, Charles Hayman of Niagara Falls, state treasurer; Arthur L. Skinner, secretary, Vincent R. McFaul, treasurer and several members of the board of directors were in attendance to act as a reception committee. The office, which consists of three rooms, is located at 71 Root building, Chippewa and Franklin streets, Buffalo. Miss Marion Gueth is corresponding secretary. J. H. Michael, chairman, urges all members of the state body to make the office their headquarters while on business in Buffalo.

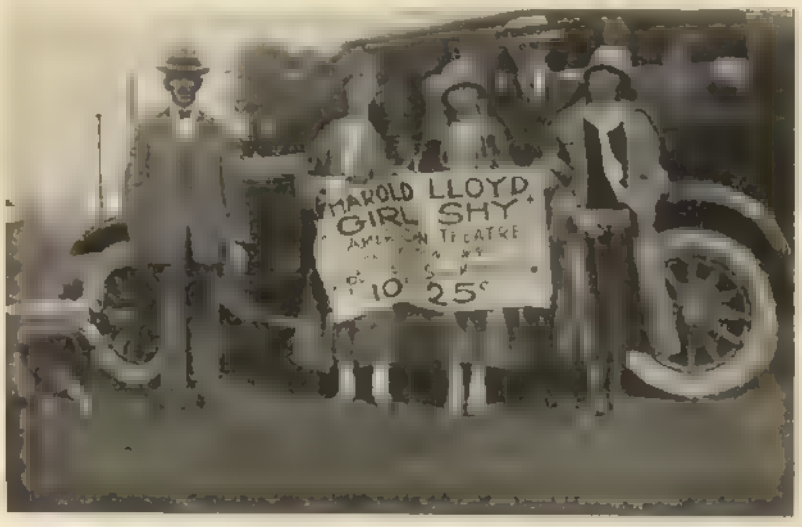
All complaints as to film shipments or any other business can also be transacted from this office by phoning or writing the office at any time. The headquarters are open all day.

* * *

Ready for Frolic

The Yankee Six orchestra augmented to 12 pieces has been engaged to play at the Hallowe'en Frolic of the Film Board of Trade of Buffalo to be held in the ballroom of the Hotel Statler on the evening of Friday, October 31. Several local exhibitors, including Eddie Weinberg, Al Beckerich, J. H. Michaels, Charlie Hayman of the Falls and others are attending gymnasium daily to get in trim for the ball. All promise to be in shape to dance the night through.

Bill Calihan is coming from Rochester but it is said that his wife also insists on coming with him.



W. L. Flint and his ballyhoo for Harold Lloyd's "Girl Shy" which is distributed through Pathe. Mr. Flint is owner of the Gem Theatre in Arlington, Wash., and he put the old family gas wagon to good use in exploiting his feature picture.

Capital Enterprises Expand

Four new Kansas theatres have been acquired by Capitol Enterprises of Kansas City, Mo., making twenty-four now under the control of that organization. The new theatres obtained are Hetrick, Peoples and Main Street, at Chanute, Kas., and the Wareham at Manhattan, Kas. The company also is building a large first run house in Lincoln, Neb.

Samuel L. Harding of Kansas City is president of the company.

* * *

Device to Help Projectionist

Seattle is the home of a young inventor who has lately perfected a device for taking the heat out of light used in the projection of pictures, without destroying the value of the light. This device was subjected to an eighteen hour demonstration at the Gem theatre here, on Labor Day. R. N. Kendig the inventor used to be an operator at the Gem. Mr. Kendig has just returned from Washington, D. C., where he has applied for a patent. The device will be manufactured here beginning in a small way pending the granting of the patent.

* * *

Good Exploitation

Manager [illegible] of the Liberty [illegible], South [illegible] place [illegible] pictures [illegible] Opolis [illegible] Street. These bear the legend "Alaskan Way," leading the way to the [illegible] which is playing "The Alaskan" to big business.

* * *

Tom Kennedy Busy

Tom Kennedy of Champlain, N. Y., is without question the busiest exhibitor in the Empire State. Aside from running the motion picture theatre, Mr. Kennedy is the express agent in his home town, federal officer and a few other things. Last week he was in Syracuse appearing in federal court in connection with some bootlegging cases.

* * *

Film Salesmen Win

The film salesmen proved themselves better ball players at the first annual outing of the Albany Film Board of Trade, and the salesmen last Saturday. The game lasted only one inning with the result that the salesmen claimed victory with a score of 9 to 0. The outing was attended by about seventy.

* * *

Everett, Wash. Tax

If plans materialize, Everett, Wash. exhibitors will soon be paying an increased tax into the city coffers. The idea is to outlaw the present code which now covers the ancient admission price of 10c and 15c and put into effect a city tax on theatres to equal the income of one night a year at 35c a seat. This would make an aggregate sum to the city of $1,150. The City Commission has the plan under consideration.

* * *

Crescent Buys Chain

At a forced sale of the theatre properties operated by the North Alabama Amusement Corporation held in Florence, Alabama, September 22, the theatres under their control were purchased by the Crescent Amusement Company and Louis Rosenbaum, paying therefore a cash consideration of $14,600 in addition to assuming the indebtedness against the company, amounting to $71,040.20.

The Crescent Amusement Company is controlled by Tony Sudekum, and operates theatres in Nashville and many other points in Tennessee. The transfer of properties includes the Princess Theatre building in Florence and leases on the Majestic, in Florence, the Strand in Tuscuma, The Lyric and Oakace in Sheffield, and all property owned by the North Alabama Enterprises including picture franchises. Mr. Rosenbaum, who becomes interested with Mr. Sudekum in the control of the properties was a large stockholder in the retiring North Alabama Enterprises.

Among those present to welcome home Mr. and Mrs. Jules Mastbaum who recently arrived on the Berangaria was the popular fan idol Thomas Meighan, of Paramount fame. Mr. Mastbaum's daughters are being "saved" by Tom. Nice situation.

* * *

Referendum on Censorship

The Atlanta Georgian has come out in a broad statement that motion pictures need no censorship except by patronage, after announcing the results of a "Telephorum" inquiry inaugurated by the paper to ascertain the personal opinion of leaders in every walk of life and enterprise in the city of Atlanta. The paper published in detail the result of the inquiry quoting many leading men and women of Atlanta.

* * *

Round Table Briefs

Miss Elberta Pierson, office manager for Southern States Film Co., at Dallas, Texas, has resigned to enter private business.

* * *

J. F. Adams and Mrs. Cooper, operators of two moving picture theaters at Norphlet, Ark., were fined $1.00 and costs each for keeping their houses open on Sunday.

* * *

The Texas Theater at Houston Texas, will open about December 1. The new theater will be strictly modern and up to date in every particular, and will be equipped with a style 235 Wurlitzer Hope-Jones Unit Organ, and will also have an up to date powerful broadcasting radio station, to be operated in connection with the theater.

* * *

The new Lyric Theater at Brady, Texas, will be opened in the near future. It will be equipped with a $15,000 pipe organ and other modern equipment and furnishing.

* * *

The Brooks Amusement Co., has leased the Jensen theaters at Pauls Valley and Graham, Okla., from J. G. Jensen. Mr. Jensen will continue as manager.

* * *

The Capitol Theater at Oklahoma City, Okla., reopened Oct. 31, after having been completely remodelled, now in Egyptian style. New boxes and seats and modern equipment installed. Earl Settle is the new manager. Paramount pictures will be featured.

* * *

The Coy theater at Wagoner, Okla., has been sold by L. W. Brophy to E. D. Looney of Siloam Springs, Ark., who has taken charge.

* * *

The Okla. theater at Bartlesville, Okla., reopened Labor Day, Sept. 1. The theater has been renovated and remodeled.

* * *

Three hundred new seats are about to be installed, wiring put in for side lights, and a complete job of redecorating done. The White Center theatre enjoys the reputation of being one of the quietest and best conducted houses in the territory. With all these jobs on his hands is it any wonder George can't take time to be sick?

* * *

W. Flint owner of the American theatre, Arlington, Wash., has bought the theatre in Colville, Wash., from H. D. Williams. Mr. Flint will remodel and redecorate extensively. The Colville house seats 400.

* * *

Jack Howard is new manager at the Neptune, the Jensen & Von Herberg house in the University district of Seattle. Prior to this transfer, he had been handling all the publicity for the J. & V. houses here.

* * *

Columbia theatres in Seattle and Portland are preparing an excellent campaign for October which is Al Lichtman month. Universal Jewels will be played during the entire month with the additional attraction of an augmented orchestra.

* * *

Mr. and Mrs. J. C. Thomas have bought the South Park theatre, South Park, Wash., and are planning to clean up the house with first class feature attractions. "Dorothy Vernon" was their opening attraction. The policy of former owners, lamentably, had been a dubious brand of Westerns, and very little effort made to run a first class picture theatre. Mr. and Mrs. Thomas are from Oakland.

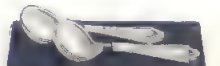
TUDOR PLATE
Oneida Community Made

	Baronet	Duchess			SILVER PLATE IS KEPT IN REGULAR TRADE HOURS	PRICES TO INCLUDE GOVERNMENT TAX
			SPOONS			
	39602	36602	Tea	12 in box	$ 3 64 per doz.	$1 50 set of six
	39604	36604	Dessert	12 in box	6 [illegible] per doz.	1 75 set of six
	39605	36605	Table	12 in box	7 28 per doz	3 00 set of six
	39604	36604	Soup (Round Bowl)	12 in box	7 28 per doz.	3 00 set of six
Tudor Plate			**FORKS**			
	39607	36607	Dinner or Medium (Flat Handle)	12 in box	7 28 per doz.	3 00 set of six
is to the	39606	36606	Dessert (Flat Handle)	12 in box	6.92 per doz.	1 75 set of six
			KNIVES			
Lower Price Market	39615	36615	Embossed Handle Dinner or Medium	6 in blue lined box	9 16 per doz.	4 25 set of six
	39616	36616	Embossed Handle Dessert	6 in blue lined box	8 06 per doz.	3 50 set of six
what	39611	36611	Hollow Handle Dinner or Medium (Plated Blades)	6 in blue lined box	21 68 per doz.	8 25 set of six
	39654	36604	Hollow Handle Dessert or Medium Stainless Blades	6 in blue lined box	14 96 per doz.	6 25 set of six
	39612	36612	Hollow Handle Dessert	6 in blue lined box	21 28 per doz.	8 00 set of six
Community Plate	39698	36698	Embossed Handle Fruit	6 in blue lined box	7 92 per doz.	3 00 set of six
			CORRECT SERVICE PIECES			
is to the Higher	39650	36650	*Sugar Spoon	1 in blue lined gift box	87 each	70 each
	39695	36695	*Butter Knife	1 in blue lined gift box	87 each	70 each
	39729	36729	Butter and Sugar Set	Set in blue lined gift box	1 75 set	1 40 set

*Illustrated on next page

NOTE—All prices subject to change without notice

TUDOR PLATE
Oneida Community Made



Bouillon or Consomme Spoons

Iced Tea or Iced Drink Spoons

Individual Butter Spreaders

Pierced Server for Tomatoes, Etc.

Orange or Grape Fruit Spoons

Individual Salad Forks

Baby Spoon (Bent Handle)

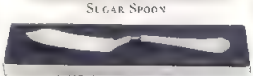
Cold Meat or Serving Fork
Small Cold Meat or Sardine Fork

Salad Dressing or Cream Ladle
Serving or Gravy Ladle

Large Berry or Serving Spoon

Pickle or Olive Fork

Sugar Spoon



Butter Knife

Sherbet or 5 o'Clock Tea Spoons
After Dinner Coffee Spoons

Oyster or Seafood Forks

CORRECT SERVICE PIECES

In Blue Lined Gift Boxes with New Glass-Kare Anti-Tarnish Sealed-Tight Packs, Absolute Protection Against Dust and Moisture

ONEIDA	DUCHESS		PRICES	
			SILVER PLATE	STERLING SILVER
96615	96615	Coffee Spoons	$2.04 set of six	$1.75 set of six
96601	96601	Soup, Tea or Sherbet Spoons	.41 each	.35 each
96602	96602	Bouillon or Consomme Spoons	3.64 set of six	3.00 set of six
96679	96679	Iced Tea and Iced Drink Spoons	4.68 set of six	4.00 set of six
96657	96657	Individual Butter Spreaders	3.44 set of six	2.75 set of six
96641	96641	Orange or Grapefruit Spoons	3.48 set of six	2.75 set of six
96619	96619	Baby Spoon, Bent Handle	.87	.80
96679	96679	Berry or Serving Spoon	2.11	1.75 each
96483	96483	Jam or Preserve Server	.87	.60 each
96606	96606	Individual Salad or Pastry Fork	5.24 set of six	4.25 set of six
96679	96679	Pickle, Relish, Oyster or Seafood Forks	3.46 set of six	2.75 set of six
96667	96667	Cold Meat or Serving Fork	1.54 each	1.25 each
96668	96668	Small Cold Meat Fork	1.04 each	.85 each
96646	96646	Pickle or Olive Fork	1.18 each	1.00 each
96507	96507	Individual Butter Spreaders	4.64 set of six	3.75 set of six
96715	96715	Salad Dressing or Cream Ladle	1.21 each	1.00 each
96717	96717	Serving or Gravy Ladle	1.84 each	1.50 each
96721	96721	Medium Soup or Serving Ladle	4.34 each	3.50 each
96708	96708	Sugar Tongs	1.46 each	1.25 each
96690	96690	Pierced Server for Tomatoes, Croquettes, etc	2.11 each	1.75 each
96728	96728	2-Piece Steak or Game Carver, Hollow Handle	Set in Blue Lined Gift Box	4.00 set
96753	96753	Child's Set (Spoon, Fork and Flat Knife	Set in Blue Lined Gift Box	1.50 set

TUDOR PLATE
Oneida Community Made

Knife and Fork Sets

Just the thing you've been looking for.

Increase your sales by displaying this set.

Tudor Knife and Fork Set

In a beautiful hand lined gift box.

Gives you a real opportunity to display set advantageously and sell it as a Gift Piece.

First time the KNIFE and FORK SET has ever been offered in gift boxes.

Buffet Sets

The big thing to feature in TUDOR. The Case Is FREE with 26 Pieces.

26-Piece Tudor Buffet

BLUE LINED Attractive display of Silverware.

A REAL APPEAL TO THE WOMAN. Not merely a container but a distinct ornament on her sideboard

CONVENIENT—Slips easily into side board drawers, brings SILVER TO table all at one time. SAVES STEPS

26-PIECE MAHOGANY FINISH CHEST

WITH DRAWER ILLUSTRATED

Harvard	Duchess		SELLING PRICES SUBJECT TO REGULAR TRADE DISCOUNT	PACKING CONSUMERS NET PRICES SUBJECT TO DISCOUNT TAX
		KNIFE AND FORK SETS (6 KNIVES AND 6 FORKS IN BLUE LINED BOX		
36803	36803	Embossed Handle Dinner Knives and Flat Dinner Forks	$8 22 set	$6.75 per set
36804	36804	Embossed Handle Dessert Knives and Flat Dessert Forks	7 [illegible] set	6.00 per set
36742	36742	Hollow Handle Dinner Knives and Flat Dinner Forks	14 48 set	11.25 per set
36508	36508	Hollow Handle Dinner Knives (Stainless and Flat Dinner Forks	16 04 set	[illegible] per set
36743	36743	Hollow Handle Dessert Knives and Flat Dessert Forks	14 10 set	10.75 per set
		BUFFET SETS (26 PIECES)		
36585	36585	With Embossed Handle Dinner Knives and Flat Dinner Forks	15.44 each	[illegible] each
36581	36581	With Embossed Handle Dessert Knives and Flat Dessert Forks	14 98 each	[illegible] each
36584	36584	With Hollow Handle Dinner Knives and Flat Dinner Forks	31 70 each	[illegible] each
36579	36579	With Hollow Handle Dinner Knives (Stainless and Flat Dinner Forks	23 26 each	[illegible] each
36580	36580	With Hollow Handle Dessert Knives and Flat Dessert Forks	24 18 each	[illegible] each
		26-PIECE CHESTS		
475B	475B	Grain Leatherette Flat—Empty	2 60 each	1.75 each
361002	361002	with Embossed Handle Dinner Knives and Flat Dinner Forks	18.04 each	14.50 each
36408	36408	with Embossed Handle Dessert Knives and Flat Dessert Forks	17 58 each	[illegible] each
361000	361000	with Hollow Handle Dinner Knives and Flat Dinner Forks	24 30 each	[illegible] each
465A	465B	Oak Finish with Drawer—Empty	2 60 each	[illegible] each
36860	36860	with Embossed Handle Dinner Knives and Flat Dinner Forks	18 04 each	[illegible] each
36896	36896	with Embossed Handle Dessert Knives and Flat Dessert Forks	17 58 each	14.00 each
36859	36859	with Hollow Handle Dinner Knives and Flat Dinner Forks	24 30 each	18.75 each
464B	464B	Mahogany Finish with drawer—Empty	2 60 each	1 75 each
36930	36930	with Embossed Handle Dinner Knives and Flat Dinner Forks	18 04 each	[illegible] each
36494	36494	with Embossed Handle Dessert Knives and Flat Dessert Forks	17 58 each	[illegible] each
36928	36928	with Hollow Handle Dinner Knives and Flat Dinner Forks	24 30 each	[illegible] each

THE WATT MINING CAR WHEEL CO.

BARNESVILLE, OHIO, U. S. A.

Established 1863

SELLING "WATT QUALITY PRODUCTS"

PITTSBURGH, PA
W. C. Wilson
1115 Greenfield Ave

HUNTINGTON, W. VA
J. C. Bellamy
[illegible] 24th Ave

NEW YORK, N. Y.
C. R. Gee Co
66 Beaver St

CHICAGO, ILL.
W. W. Boyce
140 So. Dearborn St

DENVER, COLO
Lindrooth, Shubart & Co
Boston Bldg

BIRMINGHAM, ALA
Industrial Supply Co

SAN FRANCISCO, CAL.
N. D. Pratt
Sheldon Bldg

Products

Coal, Ore, Quarry and Industrial Cars, Trucks, the original Watt Self-Oiling, Plain-Bearing Wheel, (cap or capless) Watt Brass Bushed Wheel, (cap or capless) Watt Hyatt Roller Bearing Wheel, (cap or capless) Watt Timken Roller Bearing Wheel, Watt Solid Roller Bearing Wheel. All types of Journal Boxes, Plain or Special Bearing.

Specifications

If you submit plans, kindly advise if you desire us to quote strictly in accordance with them.

Oftimes we can make slight changes in your car to conform to our shop practice, which lowers price considerably. Our engineers, who have specialized in your problems, can sometimes make suggestions which will add materially to the strength of your car, likewise insure better production.

All cars shown here are just a few of the hundreds illustrated in our catalogs. They can all be built to meet your particular requirements—as to capacity and gauge. Write for catalogs.

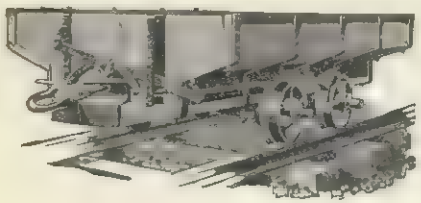


Fig. 1178

Fig. 1178—The car shown here is one we built in strict accordance from design and specifications furnished by customer. Ends are solid for a rotary dumping cage, the car being gripped by axle ends which you will note extends out from wheel. Brake shoes are of forged steel, cast steel bumper and equipped with swivel couplings which permits a trip of cars to be dumped without uncoupling. Trucks furnished are Watt-Hyatt Roller Bearing Wheels.

Fig. 1188

Fig. 1187, 1188 and 1189—Are steel cars with wood bottom; wheels and brake lever are housed in car. Wheels furnished are Watt-Hyatt Roller Bearing—steel brake band, link and pin couplers. Where operators are wanting more capacity, without increasing height or length of car, these types are exactly meeting these requirements.

Fig 1187

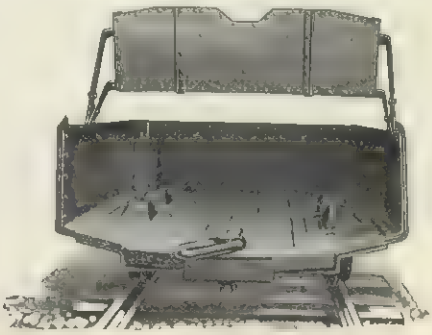


Fig. 1189
We Built 600 of These Cars For One Operator.

Fig 1179

Fig. 1179—Shows a wood car, bail door, cast iron shoes. The brake lever is located on rear end, pulls up to set.

Fig. 1068

Fig. 1068—Is a steel car, about the lowest car we ever built for low coal. The sides and ends have drop doors to facilitate the loading.

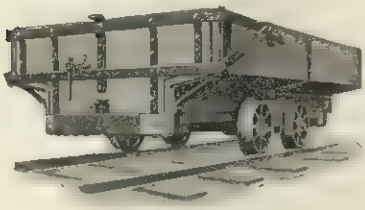


Fig. 136

Fig. 136—Shows a typical wooden binder die car, bail door, wooden brake block, brake lever on end.

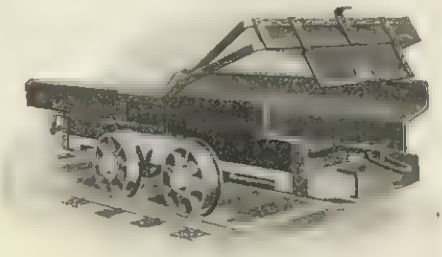


Fig. 133

Fig. 133—Shows a steel car, bail door. Note the steel side sheet has the Watt steel top roll. It is a much better stiffener than angles or flat bars.

Fig. 140

Fig. 140—Shows a steel car with a swing door. There are any number of latching arrangements that can be furnished with this type of door.

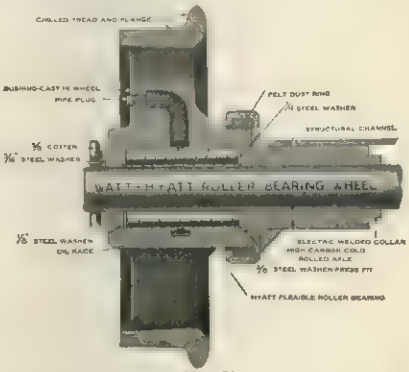


Fig 1173

Fig. 1173—Most everyone is familiar with the merits of Watt Quality Wheels. The one shown here is the famous Watt-Hyatt Roller Bearing. This is called the open end wheel and is also made with a cap on end as shown on wheel below. Lubrication is perfect and end of wheel is made dust-proof by felt hooded box.

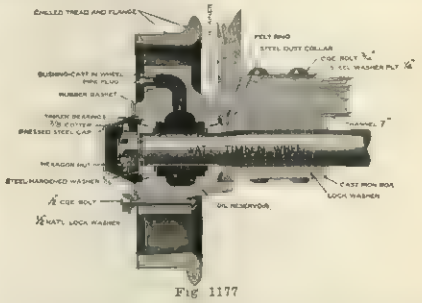


Fig 1177

Fig. 1177—Our method of applying Timken Roller Bearings to mine car wheels, pressed steel cap on end prevents grease from coming out and a very roomy oil reservoir has been provided. Our catalogs show all other types of wheels. If interested, a copy will be mailed upon request.

YOUNG CAR COMPANY

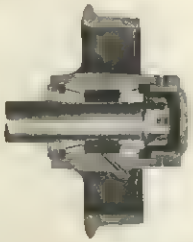
Successor to J. C. SMITH HOE & TOOL CO.

EVANSVILLE, INDIANA

Manufacturers of

Wood, Steel and Composite Mine Cars, Pit Cars, and Skips

Young Wheels With Timken Tapered Roller Bearings



Now to keep up with the progress of efficiency, "YOUNG" offers a new line of mine car trucks equipped with Timken Tapered Roller Bearings. These bearings have proved themselves worthy of the highest praise in pit car service and are well worth the money.

A Representative Mine Car

Engineering

We have a mine car engineer available at all times to assist you in eliminating your mine car problems. He is at your service for the asking.

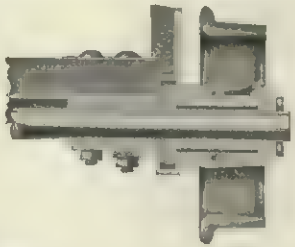
We build cars from the ground up.

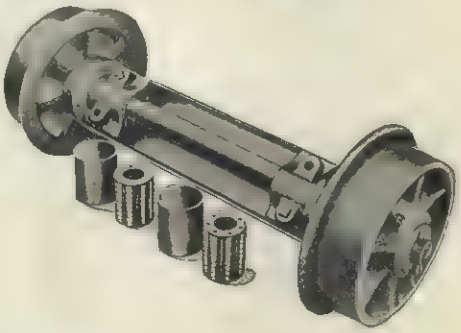
We build Bodies and install any standard make of trucks. We can save you money. Write for catalogue.

Low Side Mine Car

Young Wheels With Hyatt Flexible Roller Bearings

Hyatt equipped mine car wheels provide a true rolling action instead of the sliding or rubbing friction of ordinary plain bore wheels and therefore eliminate waste of power. They also lower operating costs because they need oiling only three or four times a year and cannot be gouged out. The life of a plain bearing wheel is limited to the life of its hub. Many Hyatt bearings have been in service for more than a decade and their life is limited only to the life of the tread and flange.





A Hyatt bearing with the outer race removed showing flexible high grade steel rollers. These rollers insure full line contact at all times thereby providing an even distribution of the load. The slight flexibility also minimizes and absorbs shocks caused by rough rail joints. The rollers are hollow and act as reservoirs for the oil and the spiral slots in the rollers carry the oil back and forth across the bearing surfaces, providing an even distribution of oil on all parts, thus eliminating wear.

Mens' 18-Size Swiss Watches

American Style
Excellent Workmanship
Big Values

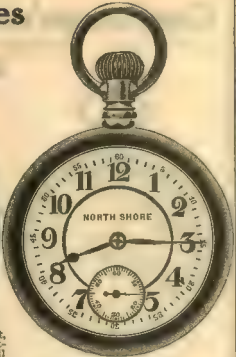
No. 4W82. Men's Watch, 18 size Hunting electro-gold plated case, fancy engraved designs. Fitted complete with 7 jewel Northshore movement. Each . 3.34

No. 4W83. As above, in open face, screw back and bezel electro-plated case. Each 3.34

North Shore, 18 size movement, lever escapement, 7 jewels in setting, large red center jewel, full plate model, full nickel, highly damaskeened and finished, fine tempered hair spring, special model patented regulator, plate stamped 2 adjustments and will give cold service, white enameled dial with margin figures, depressed center dial, high grade center. Will fit any 18 size American made case.

Movement Only

No. 4W80. Open face..... 2.65
No. 4W81. Hunting..... 2.65



No. 4W84. Men's Watch, 18 size Hunting, extra quality gold plated case, loco and other engravings. Fitted with 7 jewel Northshore movement. Each 3.51

No. 4W85. As above, in open face, screw back and bezel; extra quality gold plated case. Each 3.51

No. 4W86. Men's Watch, 18 size, Hunting nickel case, plain, polished and engine turned or fancy designs. Fitted complete with 7 jewel Northshore movement. Each 4.14

No. 4W87. As above, in open face, screw back and bezel. Each 3.55

No. 4W88. Men's Watch, 18 size Hunting, gold filled case. Warranted to wear for 5 years. Engine turned or fancy assorted engraved designs. Fitted complete with 7 jewel Northshore movement. Each 5.40

No. 4W89. As above, in open face, screw back and bezel. Each 4.40

No. 4W90. Men's Watch, 18 size, open face, solid nickel back, screw bezel, swing ring with dust-proof pendant. Fitted complete with 7 jewel North Shore movement. Each 4.05

Men's 18-Size Swiss Watches

Electro Gold Plated, Nickel and Gold Filled Cases

No. 4W93. Men's Watch, 18 size Hunting gold plated case, antique bow, assorted fancy engraved designs. Fitted complete with 17 jewel Northshore movement. Each 3.59

No. 4W94. As above, in open face, screw back and bezel. Each 3.59

North Shore, 18 size, Swiss movement, lever escapement, 17 jewels, engraved composition settings, fine red center jewel and balance wheel set in recess with guilded back ground plate, stamped heat and cold, 3 adjustments, special patented regulator, highly polished, full nickel, highly damaskeened and finished, fine enameled dial, depressed center, red margin figures. Fits all 18 size American cases. Fine appearance and workmanship. Best value of 18 size movement ever offered. Each 2.90

No. 4W95. Men's Watch, 18 size extra quality, gold plated case. Fitted complete with 17 jewel North Shore movement. Each 3.75

No. 4W96. The same as above, in open face case. Each.... 3.75

No. 4W97. Men's Watch, 18 size, open face, nickel case, screw bezel solid back, swing ring, with dust proof pendant. Fitted complete with 17 jewel Northshore movement. Each 4.30

No. 4W98. Men's Watch, 18 size Hunting case. Warranted 5 years. Assorted engraved designs. Fitted complete with 17 jewel North Shore movement. Each..... 6.85

No. 4W99. As above, in open face, screw back and bezel case. Each 4.85

No. 4W100. Men's Watch, 18 size gold filled case. Warranted to wear for 10 years. Assorted engraved or engine turned designs. Fitted complete with 17 jewel North Shore movement. Each 6.85

No. 4W101, As above, in open face, screw back and bezel case. Each 6.05

Men's 18-Size Railroad Style Watches

No. 6W92. Men's Watch, 18 size, open face, high grade electro gold-plated case, bassine shape locomotive engraved design, fitted complete with a 21 jewel high grade Swiss movement.

Each 4.10

Special Low Priced 21J Watches

18 Size Movement, fancy gold and nickel damaskeened, 21 jewel gilt composition settings, exposed winding wheels, patent micrometric regulator, depressed fine white enameled Montgomery style dial, with marginal minutes, dial and plates stamped 21 jewels, presents an elegant appearance, fine copy of high grade American railroad style movement. **Movement only.**

Each 3.25

No. 6W94. Men's Watch, 18 size, open face, gold filled case, stamped 25 years fancy assorted engraved design, fitted with a 21 jewel high grade Swiss movement, Montgomery dial.

Each 5.00

No. 6W95. Men's Watch, 18 size, open face, 2 ounce nickel case, screw bezel, solid back swing ring with a dust-proof pendant, fitted with a 21 jewel high grade Swiss movement.

Each 4.65

No. 6W96. Men's Watch, 18 size, open face, screw back and bezel case warranted to wear for 10 years, fitted complete with a high grade 21 jewel Swiss movement.

Each 6.40

No. 6W93. Men's Watch, 18 size, open face, screw back and bezel, 2 ounce nickel case bassine, plain polished, fitted with a high grade 21 jewel Swiss movement.

Each 4.15

Men's 18 Size Railroad Model Watch

Fine Appearance. American Model. Big Value

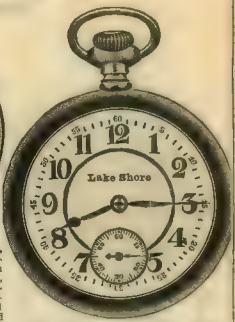
No. 6W86. Men's Watch, 18 size open face electro gold plated case, bassine shape locomotive engraved design. Fitted complete with Lake Shore 21 jewel Railroad style movement. Each . 4.35

No. 6W85. As above, Hunting style. Each..... 4.35

Lake Shore 18 Size Movement. Fancy gold and nickel damaskeened, 21 jewels gilt composition settings, exposed winding wheels, patent micrometric regulator, depressed fine white enameled Montgomery style dial, with marginal minutes. Dial and plates stamped Lake Shore 21 jewel, presents an elegant appearance, fine copy of high grade American railroad style movement.

Movements only:

No. 6W75. Hunting. Each 3.50
No. 6W76. Open Face. Each 3.50



No. 6W87. Men's Watch, 18 size open face screw back and bezel, 2 oz. nickel case bassine, plain polished. Fitted with Lake Shore 21-jewel Railroad style movement. Each 4.40

No. 6W82. Men's Watch 18 Size Open Face Gold Filled Case. Guaranteed for five years, plain polished, engine turned or assorted fancy engraved designs. Fitted complete with Lake Shore 21-jewel railroad style movement. Each 5.25

No. 6W81. Men's Watch. 18 Size Hunting Gold Filled Case. Stamped guaranteed 5 years, assorted fancy engraved designs. Fitted complete with Lake Shore 21-jewel railroad style movement. Each 6.25

No. 6W83. Men's Watch 18 Size Hunting, Gold Filled Case. Warranted to wear for 10 years, assorted fancy engraved designs. Fitted complete with Lake Shore 21-jewel railroad style movement. Each 7.45

No. 6W84. As above, in open face, screw back and bezel case. Each 6.65

1847 ROGERS BROS.

AMBASSADOR PATTERN

Grey Finish

Successfully combining the elements of correct outline with simplicity and originality of decoration

No. 63 Dessert Knife
Modeled Handle

No. 62 Dessert Fork
Solid Handle

Soup
Spoon

Tea Spoon

ILLUSTRATIONS
ACTUAL SIZE

Dessert Fork
Flat Handle

Dessert Knife
Hollow Handle

Six in Box, Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

Bouillon Spoons, six in blue velvet lined box . . . . . per set, $8.55

Hollow Handles, Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.76	Breakfast Knives	$28.58
				Dessert Forks	28.16		

Solid Handles, No. 62 — Six in Racked Box, Prices per Dozen - Modeled Handles, No. 63

Dinner Forks, No. 62	$12.10	Dessert Forks, No. 62	$11.68	Dinner Knives, No. 63	$15.02	Dessert Knives, No. 63	$14.60

INTERNATIONAL SILVER CO.

AMBASSADOR PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 624/84
Coffee Spoons
Set of six, $4.59

No. 604/84
Butter Knife and
Sugar Shel.
Per set, $3.48

No. 608/84
Sugar Shell
Each, $1 63

No. 609, 84
Butter Knife
bent handle
Each, $1.85

Iced Tea
Spoon
Per dozen
$13 36

No. 647/84
Orange or Grape Fruit
Spoons
Set of six, $5.84

No. 717/84
Salad Forks, individual
Set of six $9 18

No 689/84
Sugar Tongs
Each, $2.36

No. 727/84
Baby Spoon, bent handle
and Food Pusher
Per set, $2 50

No. 781/84
Ice Cream Forks
Set of six, $7.30

No. 747/84 Berry Spoon
Small, each, $3 23

No. 598/84 Child's Set, 3 pieces
Embossed Solid Handle Knife
Per set, $3.48

No. 116/84 Child's Set, 3 pieces
Per set, $3 76

No. 593/84 Child's Set, 3 pieces
Nickel Silver, Silver Soldered
Hollow Handle Knife
Per set, $4.59

No. 606/84
Cold Meat Fork, small
Each, $1 98

No. 652 84
Butter Spreaders
Set of six, $7 51

c-6-23

AMBASSADOR PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 769/84
Baby Spoon and Fork, short handle, per set, $2.50

No. 714, 84 Cucumber or Tomato Server, each, $4.17

No. 662/84
Cold Meat Fork, large
Each, $2.43

No. 731 84
Cheese Server
hollow handle
Each, $3.27

No. 816/84 Dessert Server
Each, $5.22

No. 683/84
Jelly Knife
Each, $2.09

No. 8.2 84
Olive Spoon
Short, each, $2.09

No. 615/84 Berry Spoon
Large, each, $3.76

c 6-23

AMBASSADOR PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 624/84
Pie or Ice Cream Server, hollow handle
Each, $5.98

No. 622/84
Oyster Forks
Set of six, $6.05

No. 722/84
Pickle Fork, short
Each, $1.74

No. 611/84
Gravy Ladle
Each, $2.92

No. 610/84
Cream Ladle
Each, $2.23

No. 612/84
Oyster Ladle
Each, $6.68

No. 613/84
Medium Ladle
Each, $9.04

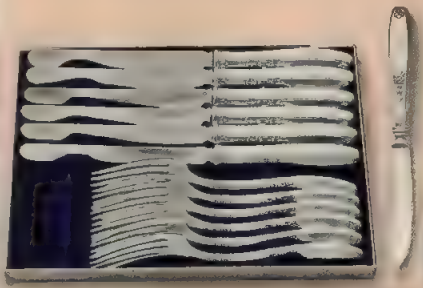
No. 733/84
Bird or Steak Set, 2 pieces
Per set, $9.18

No. 734/84
Bird or Steak Set, 3 pieces
Per set, $13.36

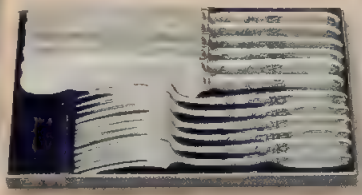
No. 658/84
Game Set, 2 pieces
Per set, $15.02

No. 657/84
Carving Set, 3 pieces
Per set, $19.60

Nickel Silver, Silver Soldered Hollow Handles, Steel Blades



No. 738/84
Fruit Knives, h.h.
Set of six, $14.39



No. 158½ Ambassador. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58

No. 159½ Ambassador. Dessert, per set, $22.94

No. 165½ Ambassador. Six each Hollow Handle Breakfast Knives and Flat Handle Dinner Forks, per set, $23.58

No. 166½ Ambassador. Six each Hollow Handle Breakfast Knives and Flat Handle Dessert Forks, per set $23.16

No. 154½ Ambassador. Six each No. 62 Dinner Knives and Forks, per set, $12.18

No. 157½ Ambassador. Dessert, per set, $11.68

No. 155½ Ambassador. Six each No. 62 Dinner Knives and Ambassador Flat Handle Dinner Forks, per set, $15.22

No. 156½ Ambassador. Dessert, per set, $14.72

No. 176½ Ambassador. Six each No. 63 Modeled Handle Dinner Knives and No. 62 Embossed Solid Handle Dinner Forks, per set, $13.56

No. 177½ Ambassador. Dessert, per set, $13.14

N

c 6.23

AMBASSADOR PATTERN

Grey Finish

Successfully combining the elements of correct outline with simplicity and originality of decoration

No. 62 Dessert Fork
Solid Handle

Soup Spoon

Tea Spoon

ILLUSTRATIONS ACTUAL SIZE

Dessert Fork
Flat Handle

No. 63 Dessert Knife
Modeled Handle

Dessert Knife
Hollow Handle

Six in Box, Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

Bouillon Spoons, six in blue velvet lined box per set, $8.55

Hollow Handles, Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78	Breakfast Knives	$28.58
				Dessert Forks	28.16		

Solid Handles, No. 62 — Six in Racked Box, Prices per Dozen — Modeled Handles, No. 63

Dinner Forks, No. 62 $12.10 Dessert Forks, No. 62 $11.68 | Dinner Knives, No. 63 $15.02 Dessert Knives, No. 63 $14.60

K e-6-23

INTERNATIONAL SILVER CO.

AMBASSADOR PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 624/84
Coffee Spoons
Set of six, $4.59

No. 604/84
Butter Knife and
Sugar Shell
Per set, $3.48

No. 608/84
Sugar Shell
Each, $1.63

No. 609/84
Butter Knife
bent handle
Each, $1.85

Iced Tea
Spoon
Per dozen
$13.36

No. 647/84
Orange or Grape Fruit
Spoons
Set of six, $5.84

No. 717/84
Salad Forks, individual
Set of six, $9.18

No. 680/84
Sugar Tongs
Each, $2.36

No. 727/84
Baby Spoon, bent handle
and Food Pusher
Per set, $2.50

No. 781/84
Ice Cream Forks
Set of six, $7.30

No. 747/84 Berry Spoon
Small, each, $3.23

No. 596/84 Child's Set, 3 pieces
Embossed Solid Handle Knife
Per set, $3.48

No. 116/84 Child's Set, 3 pieces
Per set, $3.76

No. 593/84 Child's Set, 3 pieces
Nickel Silver, Silver Soldered
Hollow Handle Knife
Per set, $4.59

No. 666/84
Cold Meat Fork, small
Each, $1.98

No. 652/84
Butter Spreaders
Set of six, $7.51

c-6-23

INTERNATIONAL SILVER CO.

AMBASSADOR PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. [illegible]84
Baby Spoon and Fork, short handle, per set, $2.50

No. 714/84 Cucumber or Tomato Server, each, $4.17

No. 662/84
Cold Meat Fork, large
Each, $2.43

No. 754/84
Cheese Server
Hollow handle
Each, $3.27

No. 816/84 Dessert Server
Each, $5.22

No. 683/84
Jelly Knife
Each, $2.09

No. 812/84
Olive Spoon
Short, each, $2.09

No. 615/84 Berry Spoon
Large, each, $3.76

M

c 6-23

INTERNATIONAL SILVER CO.

AMBASSADOR PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 621/84
Pie or Ice Cream Server, hollow handle
Each, $5.98

No. 672/84
Oyster Forks
Set of six, $6.05

No. 722/84
Pickle Fork, short
Each, $1.74

No. 611/84
Gravy Ladle
Each, $2.92

No. 610/84
Cream Ladle
Each, $2.23

No. 612/84
Oyster Ladle
Each, $6.68

No. 613/84
Medium Ladle
Each, $9.04

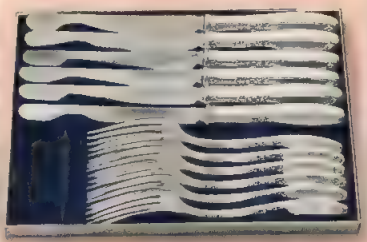
No. 733/84
Bird or Steak Set, 2 pieces
Per set, $9.18

No. 734/84
Bird or Steak Set, 3 pieces
Per set, $13.36

No. 658/84
Game Set, 2 pieces
Per set, $15.02

No. 657/84
Carving Set, 3 pieces
Per set, $19.60

Nickel Silver, Silver Soldered Hollow Handles, Steel Blades



No. 738/84
Fruit Knives in Box
Set of six, $14.39

No. 158½ Ambassador. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58

No. 159½ Ambassador. Dessert, per set, $22.94

No. 165½ Ambassador. Six each Hollow Handle Breakfast Knives and Flat Handle Dinner Forks, per set, $23.58

No. 166½ Ambassador. Six each Hollow Handle Breakfast Knives and Flat Handle Dessert Forks, per set, $23.16

No. 154½ Ambassador. Six each No. 62 Dinner Knives and Forks, per set, $22.10

No. 157½ Ambassador. Dessert, per set, $11.68

No. 155½ Ambassador. Six each No. 62 Dinner Knives and Ambassador Flat Handle Dinner Forks, per set, $15.22

No. 156½ Ambassador. Dessert, per set, $14.72

No. 176½ Ambassador. Six each No. 63 Modeled Handle Dinner Knives and No. 62 Embossed Solid Handle Dinner Forks, per set, $13.56

No. 177½ Ambassador. Dessert, per set, $13.14

N

c6-15

1847 ROGERS BROS.

ANNIVERSARY PATTERN

The simple yet rich Colonial design suggests cordial hospitality and the atmosphere of family reunion and anniversary celebration

Tea Spoon

ILLUSTRATIONS ACTUAL SIZE

Soup Spoon

Dessert Fork Flat Handle

Table Spoon

Six in Box, Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

Bouillon Spoons, six in blue velvet lined box ... per set, $8.55

Hollow Handles, Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78	Breakfast Knives	$28.58
				Dessert Forks	28.16		

Dessert Knife Hollow Handle

Solid Handles, Six in Racked Box, Prices per Dozen

Dinner Knives, No. 64 $12.10 Dessert Knives, No. 64 $11.68 Dinner Forks, No. 64 $12.10 Dessert Forks, No. 64 $11.68

c 6-6-23

INTERNATIONAL SILVER CO.

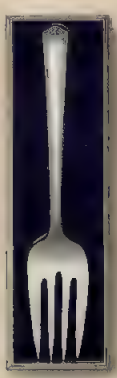
ANNIVERSARY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 615/85 Berry Spoon
Each, $3.76

No. 609/85
Butter Knife
bent handle
Each, $1.85



No. 662/85
Cold Meat Fork
Each, $2.43

No. 608/85
Sugar Shell, each, $1.63
No. 604/85 Butter
Knife and Sugar Shell
Per set, $5.48

No. 624 85
Coffee Spoons
Set of 6 x $4 59

No. 722/85
Pickle Fork
Short
Each, $1.74

No. 611/85
Gravy Ladle
Each, $2.92
No. 610/85
Cream Ladle
Each, $2.23
No. 613/85
Medium Ladle
Each, $9.04

No. 717/85 Salad Forks, individual
Set of six $9 18

No. 64. 85
Orange or Grape Fruit Spoons
Set of six. $5.84

Iced Tea
Spoon
Per dozen
$13 36

No. 652/85 Butter Spreaders
Set of six. $7 51

ANNIVERSARY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 747/85 Berry Spoon
Small, each, $3 23

No. 727 85
Baby Spoon, bent handle
and Food Pusher
Per set, $2 50

No. 767/85
Baby Spoon
short handle
Each, $1 25

No. 769/85
Baby Spoon and Fork
short handle, per set, $2 50

No. 683/85
Jelly Knife
Each, $2.09

No 812 85
Olive Spoon
Short, each, $2.09

No. 816/85 Dessert Server
Each, $5.22

No. 751 85
Cheese Server
hollow handle
Each $3 27

No. 666/85
Cold Meat Fork, small
Each, $1.98

No. 714 85 Cucumber or
Tomato Server, each, $4 17

ANNIVERSARY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 733/85
Bird or Steak Set, 2 pieces
Per set, $9.18

No. 734/85
Bird or Steak Set, 3 pieces
Per set, $13.36

No. 658/85 Game Set
2 pieces, per set, $15.02

No. 657/85 Carving Set
3 pieces, per set, $19.60

Nickel Silver, Silver Soldered, Hollow Handles, Steel Blades

No. 781/85 Ice Cream Forks
Set of six, $7.30

No. 680/85
Sugar Tongs each $2.56

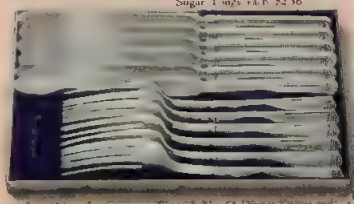
No. 622/85
Oyster Forks
Set of six, $6.05

No. 593/85 Child's Set, 3 pieces
With Piece, Silver, Silver Soldered, Hollow Handle Knife
Per set, $4.59

No. 596/85 Child's Set, 3 pieces
With Embossed Solid Handle Knife, per set, $3.48

No. 116/85 Child's Set, 3 pieces
Per set, $3.76

No. [illegible]/85
Pie or Ice Cream Server, hollow handle
Each, $5.98



No. 154½ Anniversary. Six each No. 64 Dinner Knives and Forks, per set, $12.10

No. 157½ Anniversary. Dessert, per set, $11.68

No. 155½ Anniversary Six each No. 64 Dinner Knives and Anniversary Flat Handle Dinner Forks, per set, $15.22

No. 156½ Anniversary. Dessert, per set, $14.72

No. 738/85
Fruit Knives
hollow handle
Set of six
$14.39

No. 673/64
Fruit Knives
solid handles
Set of six
$5.32

No. 158½ Anniversary. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58

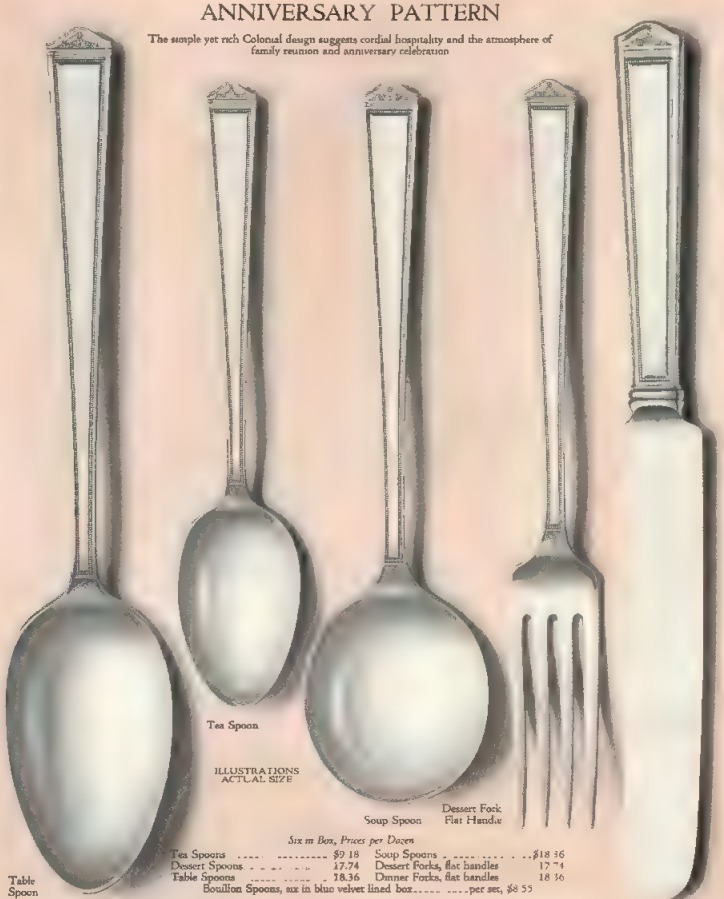
No. 159½ Anniversary Dessert, per set, $22.94

No. 165½ Anniversary. Six each Hollow Handle Breakfast Knives and Flat Handle Dinner Forks, per set, $23.58

No. 166½ Anniversary. Six each Hollow Handle Breakfast Knives and Flat Handle Dessert Forks, per set, $23.16

ANNIVERSARY PATTERN

The simple yet rich Colonial design suggests cordial hospitality and the atmosphere of family reunion and anniversary celebration



Six in Box, Prices per Dozen

Tea Spoons	$9 18	Soup Spoons	$18 36
Dessert Spoons	17 74	Dessert Forks, flat handles	17 74
Table Spoons	18 36	Dinner Forks, flat handles	18 36

Bouillon Spoons, six in blue velvet lined box ..... per set, $8 55

Hollow Handles, Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78	Breakfast Knives	$28 58
				Dessert Forks	28.16		

Solid Handles, Six in Racked Box, Prices per Dozen

C Dinner Knives, No. 64 $12.10 Dessert Knives, No. 64 $11 68 Dinner Forks, No 64 $12 10 Dessert Forks, No. 64 $11 68 6-6-23

ANNIVERSARY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 615/85 Berry Spoon
Each, $3.76

No. 609/85
Butter Knife
bent handle
Each, $1.85

No. 662/85
Cold Meat Fork
Each, $2.43

No. 608/85
Sugar Shell, each, $1.65
No. 604/85 Butter
Knife and Sugar Shell
Per set, $3.48

No. 624/85
Coffee Spoons
Set of six, $4.59

No. 722/85
Pickle Fork
Short
Each, $1.74

No. 611/85
Gravy Ladle
Each, $2.92

No. 610/85
Cream Ladle
Each, $2.23

No. 613/85
Medium Ladle
Each, $9.04

No. 717/85 Salad Forks, individual
Set of six, $9.18

Iced Tea
Spoon
Per dozen
$13.36

No. 647/85
Orange or Grape Fruit Spoons
Set of six $5.84

No. 652/85 Butter Spreaders
Set of six $7.51

D

6-6-23

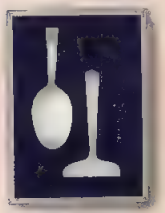
INTERNATIONAL SILVER CO.

ANNIVERSARY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 747/85 Berry Spoon
Small, each, $3.23



No. 727/85
Baby Spoon, bent handle
and Food Pusher
Per set, $2.50

No. 767/85
Baby Spoon
short handle
Each, $1.25

No. 769/85
Baby Spoon and Fork
short handle, per set, $2.50

No. 683/85
Jelly Knife
Each, $2.09

No. 812/85
Olive Spoon
Short, each, $2.09

No. 714/85 Cucumber or
Tomato Server, each, $4.17

No. 816/85 Dessert Server
Each, $5.22

No. 751/85
Cheese Server
Hollow handle
Each, $3.27

No. 666/85
Cold Meat Fork, small
Each, $1.98

E

ch 23

ANNIVERSARY PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 733/85
Bird or Steak Set, 2 pieces
Per set, $9.18

No 734 85
Bird or Steak Set, 3 pieces
Per set, $13.36

No. 658/85 Game Set
2 pieces, per set, $15.02

No. 657/85 Carving Set
3 pieces, per set, $19.60

Nickel Silver, Silver Soldered, Hollow Handles, Steel Blades

No 781/85 Ice Cream Forks
Set of six, $7 50

No. 622/85
Oyster Forks
Set of six, $6.05

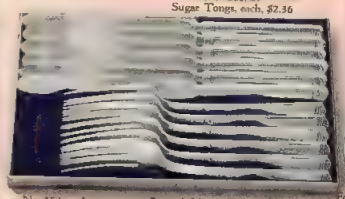
No. 593 85 Child's Set, 3 pieces
With Nickel Silver, Silver Soldered, Hollow Handle Knife
Per set, $4.59

No. 596/85 Child's Set, 3 pieces
With Embossed Solid Handle Knife, per set, $3.48

No. 116/85 Child's Set, 3 pieces
Per set, $3 76

No. 621 85
Pie or Ice Cream Server, hollow handle
Each, $5.98

No. 6087/85
Sugar Tongs, each, $2.36

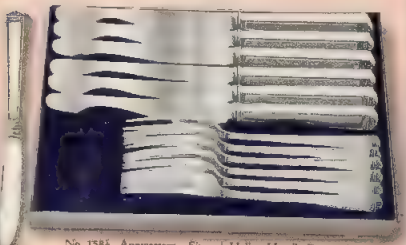


No. 154½ Anniversary. Six each No. 64 Dinner Knives and Forks, per set, $12 10

No. 157⅛ Anniversary. Dessert, per set, $11.68

No. 155⅛ Anniversary. Six each No. 64 Dinner Knives and Anniversary Flat Handle Dinner Forks, per set, $15 22

No. 156⅛ Anniversary. Dessert, per set, $14.72



No. 738 85
Fruit Knives
hollow handle
Set of six
$14 39

No. 673/64
Fruit Knives
solid handles
Set of six
$5.32

No. 138¼ Anniversary. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58

No. 159⅛ Anniversary. Dessert, per set, $22.94

No. 165⅛ Anniversary. Six each Hollow Handle Breakfast Knives and Flat Handle Dinner Forks, per set, $23.58

No. 166¼ Anniversary. Six each Hollow Handle Breakfast Knives and Flat Handle Dessert Forks, per set, $23.16

F

c-6-23

1847 ROGERS BROS.

HERALDIC PATTERN

Grey Finish

Every line suggests quality and distinction. The crest and hand-hammered effect recall the individual work of the early silversmiths

Six in Box, Prices per Dozen

Tea Spoons	$9.18	Soup Spoons	$18.36
Dessert Spoons	17.74	Dessert Forks, flat handles	17.74
Table Spoons	18.36	Dinner Forks, flat handles	18.36

Bouillon Spoons, six in blue velvet lined box per set, $8.55

Hollow Handles, Nickel Silver, Silver Soldered, Six in Flannel Roll, Prices per Dozen

Dinner Knives	$28.78	Dessert Knives	$28.16	Dinner Forks	$28.78
With Stainless Blades	31.30	With Stainless Blades	30.66	Dessert Forks	28.16

Solid Handles, No. 59 — *Six in Racked Box, Prices per Dozen* — *Modeled Handles, No. 56*

Dinner Knives, No. 59	$12.10	Dinner Knives, No. 56	$15.02	Dinner Forks, No. 56	$15.02
Dessert Knives, No. 59	11.68	Dessert Knives, No. 56	14.60	Dessert Forks, No. 56	14.60

G

C-623

HERALDIC PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 713 81 Salad Forks, individual
Set of six, $6 18

No. 751 81
Cheese Server
hollow handle
Each, $3 77

No. 615/81
Berry Spoon
Each, $3 76

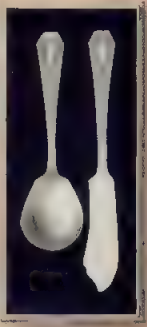
No. 681/81
Pickle Fork
Long, or Olive
Fork
Each $2 09

No 652/81 Butter Spreaders
Set of six, $7.5

No. 727/81
Baby Spoon, bent handle, and
Food Pusher, per set, $2.50

No 624 81 Coffee Spoons
Set of six $4 59

No. 714 81 Cucumber or
Tomato Server, each, $4 17



No. 604 81
Butter Knife and Sugar Shell
Per set, $3.48

No. 608/81
Sugar Shell
Each, $1 63

No 600/81
Butter Knife, bent handle
Each, $1.85

Iced Tea
Spoon
Per dozen
$13 39

No. 593/81 Child's Set, 3 pieces
With Nickel Silver Silver
Soldered, Hollow Handle Knife
Per set, $4 59

No. 596/81 Child's Set, 3 pieces
With Embossed Solid Handle
Knife, per set, $3.48

No 647 81 Orange or Grape
Fruit Spoons, set of six, $5 84

HERALDIC PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 683/81
Jely Knife
Each, $2.09

No. 724/81 Olive Spoon
Long, each, $2.09

No. 680, 81
Sugar Tongs, each, $2.36

No. 769 81
Baby Spoon and Fork
short handle, per set, $2.50

No. 652/81
Cold Meat Fork
Each, $2.43

No. 781 81 Ice Cream Forks
Set of six, $7.10

No. 116/81 Child's Set, 3 pieces
Per set, $3.76

No. 744 81 Ice Cream Spoons
Set of six, $5.84

No. 622 81
Oyster Forks
Set of six, $6.05

HERALDIC PATTERN

Illustrations One-third Scale

Fancy pieces in genuine velvet-lined Gift Boxes without extra charge

No. 658/81 Game Set
2 pieces, per set, $15.02

No. 733/81 Bird or Steak Set
2 pieces, per set, $9.18

No. 734/81 Bird or Steak Set
3 pieces, per set, $13.36

No. 657/81 Carving Set
3 pieces, per set, $19.60

Nickel Silver, Silver Soldered Hollow Handles, Steel Blades

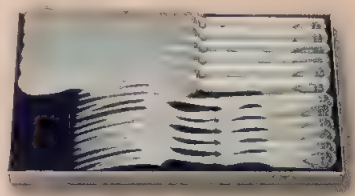
No. 610/81
Cream Ladle, each, $2.23

No. 816/81
Dessert Server, each, $5.22

No. 611/81
Gravy Ladle, each, $2.92

No. 613/81 Medium Ladle, each, $9.04

No. 621/81
Pie or Ice Cream Server, hollow handle
Each, $5.98

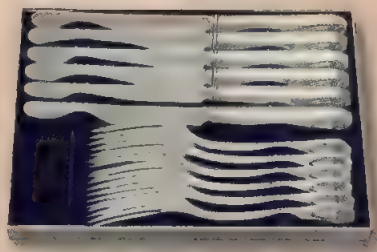


No. 174½ Heraldic. Six each No. 59 Dinner Knives and No. 56 Modeled Handle Dinner Forks, per set, $13.56

No. 175½ Heraldic. Dessert, per set, $13.14

No. 170½ Heraldic. Six each No. 56 Modeled Handle Dinner Knives and Heraldic Flat Handle Dinner Forks, $16.68

No. 271½ Heraldic. Dessert, $16.18



No. 158½ Heraldic. Six each Hollow Handle Dinner Knives and Flat Handle Dinner Forks, per set, $23.58
With Stainless Blades, $24.82

No. 159½ Heraldic. Dessert, per set, $22.94
With Stainless Blades, $24.20

ALLISON COUPON CO.

INDIANAPOLIS, INDIANA

Manufacturers of

ALLISON COUPON BOOKS

For All Purposes

The coupon book is not a new device, nor is it an experiment, but an old and well established, simplified system of account keeping with but one entry for any number of purchases necessary to equal the value of coupon book issued to customer, whether the transaction be a charge against the labor account, a promissory note signed by purchaser of the coupon book or a cash transaction.

The coupon book is a medium of exchange between the company employes and the company store; a coupon is not money but a receipt given by the customer to the dealer for merchandise received; the coupon book is a collection of various denomination receipts assigned the employe by the employer enabling him to conveniently receipt for merchandise received at the company store for any amount not exceeding the value of the book.

The bookkeeper, or issuing clerk, issues to the employe a coupon book of desired denomination; the employe in turn signs an order on the paymaster for amount of book to be deducted from wages due, or to become due him, and pay same to store-keeper; thus safeguarding all credits.

The coupon books are numbered, and each coupon bears the same number as the book. In addition, the value of the book is represented by a serial letter. In case a customer should wish to check his purchases for any reason, these numbers and serial letters enable the store manager to do so readily; all disputes with customers are prevented and the trade pleased.

When the coupons are accepted at the store in exchange for goods they go into the cash register in the same manner as government money, giving the store something to represent each sale and the register something to prove its records. They have an advantage over cash as they have no value when detached from the book and serve only as an aid in accounting, and should "thieves break through and steal" no loss is sustained.

Commissary managers from all parts of the world in the mining or lumber camps, as well as other lines of merchandising, by their continuous purchases for over thirty years, testify to the superior advantages of Allison Coupon Books.

This page shows two style and size books, but we manufacture them in any design, style, or size to suit the trade. Allison Coupon Books are the synonym of simplicity; they are not hampered by patented contraptions, which are expensive, and serve no purpose except to interfere with their use.

Complete and detailed information with samples and prices furnished upon application.

THE ARCUS TICKET CO.

Main Office and Factory

350 N. Ashland Avenue, CHICAGO, ILL.

Manufacturers of

GUARANTEED COUPON BOOKS—for commissary stores and other uses.
TICKETS—for theaters, ball parks, amusement places, etc.
CHECKS—for restaurants, lunch counters, etc.

Arcus Guaranteed Coupon Books

Are replacing metal checks, paper checks, punch tickets, and all other methods, among large employers of labor in every industry, because of their many practical working advantages to both employer and employee.

Advantages to Employer

1. **They simplify accounting.** One entry, when book is issued, takes care of all transactions.

2. **They encourage patronage of the company stores.**

3. **They foster employee good-will** by avoiding disputes and misunderstandings on charge accounts.

4. **They avoid credit losses,** as every book must be paid for in advance, either in cash, by note, or by an order on the paymaster.

5. **They may stop money-leaks.** Detached coupons go into the cash register instead of money, but have no value to any one who might pilfer them.

6. **As all coupons bear the same serial number as the book,** it becomes an easy matter to ascertain the daily or weekly purchases of any employee. Both extravagance and under-buying are easily checked.

7. **They save clerks' and cashiers' time,** as no "change" has to be made.

8. They are useful in simplifying periodical reports to "Headquarters" by subsidiary companies.

Advantages to the Employee

1. They induce him to buy worthy merchandise from a responsible source, at a reasonable price, rather than being beguiled by irresponsible peddlers or others.

2. They keep the "head of the house" better informed as to the purchases made by his family from day to day—or "book-to-book". This frequently puts a check to extravagance and debt.

3. They establish closer personal relationship and a better understanding between the employees and the store officials.

4. They serve as a receipt for every purchase made.

5. They are safe where money is unsafe, as they have no value to anyone outside of the authorized coupon-book holders.

The Arcus Guaranteed Coupon-Books

Are superior in design and execution in the following, among other respects:

1. Denominations of coupons are designed by different colors.

2. Serial number of book is printed in large figures on each individual coupon.

3. Perforations are sharp and clean.

4. Superior quality of stock is used.

5. Printing is clear.

6. Binding is secure.

7. On quantity-orders special designs are prepared, which are carried out on each separate coupon.

8. Our service is unusually prompt.

Send For Samples.

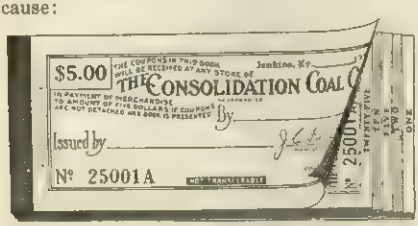
RAND McNALLY & COMPANY

Dept. 23, 536 S. Clark Street, CHICAGO

Manufacturers of

Patented Self-Indicating Coupon Books for Commissaries

In controlling commissary credit accounts with employes, RAND McNALLY COUPON BOOKS are taking the place of individual charge accounts, punch-outs, metal, paper and celluloid checks, because:



They provide a positive automatic check on Commissary Sales and Profits.

They reduce operating expense.

They simplify bookkeeping.

They prevent errors, disputes and waste of time.

They have an accounting value of 100%.

They keep an automatic check on merchandise sales.

They check store clerks automatically and guard them against temptation.

They enable you to determine readily the value of outstanding coupons represented in money.

They encourage employes to buy at the company store.

Experience has taught that "Punch-Outs", "Metal and Cardboard Checks" are cheaper only in theory. In actual practice the use of these systems reveals "loopholes" which cannot be plugged up, so the purported cheapness is unevenly offset by costly losses. Where RAND McNALLY COUPON BOOKS have supplanted "Individual Charge Accounts," the saving alone in bookkeeping more than pays for the cost of the coupon books—with their other advantages thrown in.

An old saying, "The best is the cheapest in the long run," is true, when applied to RAND McNALLY PATENTED SELF - INDICATING COUPON BOOKS in comparison with other systems.

How The Coupon Book Is Used

When Rand McNally Patented Self-Indicating Coupon Books are installed as a credit medium, the Scrip Clerk has on hand, for example, books of $1.00, $2.00, $3.00, $5.00 and $10.00 denominations. On request, the Scrip Clerk issues a coupon book to an employe. The receipt, after being filled in, is detached and turned over to the Paymaster, with instructions to deduct the full amount from the employe's next pay check. The coupon book is then used by the employe and his family at the Commissary, in the same way as regular money.

The coupon book is presented in payment for any purchase made. The clerk tears out coupons to the amount of the purchase and drops the coupons in a drawer of the Cash Register or other available receptacle. These coupons are then of no value and cannot be used again.

Automatic Check On Merchandise Sales

Counted at the end of each day, they show the total amount of the day's sales. Checking up the daily collected coupons is very simple, because each denomination is printed on a different color of paper, making their separation very easy before counting. The value of outstanding coupons may be determined at any time by simply adding up the redeemed coupons against the face value of all books issued.

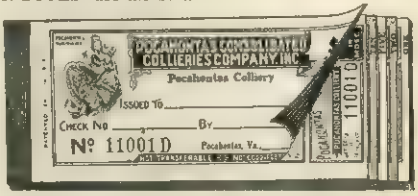
Where the accounting for several companies is done at one central point, the collected coupons, after serving their purpose for checking sales locally, may be sent to headquarters for auditing, a very valuable feature, because then the general office has an effective double check on each store's business. This is not possible with "Punch Outs" because there is no evidence of collection; or with "Metal Checks" on account of their continuous reissue.

Coupon Books Encourage Employes' Trade at the Company Commissary

There is every advantage in making it desirable for the employe and his family to buy all their supplies from the company store. The printed instructions on the covers of RAND McNALLY COUPON BOOKS encourage employes to buy supplies at the Company Commissary. Also special information concerning Safety-First and other rules of conduct may be printed on the covers.

Superiority of Rand McNally Coupon Books

There are many coupon books on the market, but users know that "RAND McNALLY SELF-INDICATING COUPON BOOKS" are the best.



It will be noted by consulting the above illustrations that each denomination is indexed at the bottom of its pages. This feature aids in making quick and accurate detachments of any amount desired without the necessity of turning a number of pages, and is especially advantageous during a rush of business.

We have special representatives calling on the Coal Mining Commissaries at regular intervals, who are well versed in everything pertaining to coupon books. Inquiries from companies using other systems are welcome, as we like to demonstrate personally the superiority of the coupon book. Attention will be given promptly and without obligation. We want you to convince yourself how the installation of the coupon book system will prove beneficial.

To Companies Already Using Coupon Books

Are you entirely satisfied with the goods and the service you are now paying for? If not, wire or write us. We shall be very glad to have an opportunity of introducing the "RAND McNALLY SERVICE."

SOUTHERN COUPON COMPANY

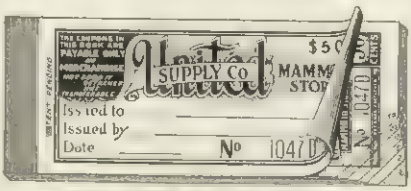
Office and Factory
BIRMINGHAM, ALA.

Exclusive Manufacturers of

Patented Perfect Indexed Coupon Books for Commissaries and Company Stores

"THE HOUSE OF SERVICE"

The Coupon System has long since passed the experimental stage and has proved most effective in satisfactorily discharging obligations between the company and its employees. It is a safe method for the company and a simple method for the employees. The Southern Coupon System makes bookkeeping unnecessary, the accounts being kept automatically, while it presents no intricacies to bewilder the employee in his transactions with the company.

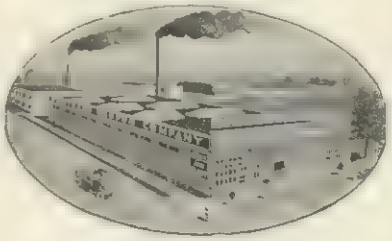


PERFECT INDEXED COUPON BOOKS

Note the position of the index—right where you would want it—where you would naturally take hold of the book to detach the desired amount.

Perfect Check Upon all Transactions

The Southern Coupon System Provides a perfect check upon all cash or charge transactions and makes impossible the leaks and losses to which such transactions are susceptible in a more effective manner than can be accomplished by any other method. Until the coupon book is issued, properly countersigned, it is valueless and, even then, if lost or stolen, worthless.



Dishonesty or carelessness cannot creep in, as each book issued must be accounted for by cash, note or receipt covering its full value. At any moment, in a relatively short time, an audit may be made merely by comparing receipts for books issued with those on hand.

The coupons are worthless unless presented in the original book of which they form a part, and the owner of the book is concerned only in obtaining the full exchange to which he is entitled when surrendering the coupons. There is no incentive to retain or lose coupons surrendered in this manner, as they are of no value either to the clerk who takes them or to any other person who may become possessed of them.

Perfect Indexed Coupon Books

You will find on this page an illustration of our Patented Perfect Indexed Coupon Book. This index assists very materially in detaching the desired denomination or denominations of coupons without turning a number of pages. It has been pronounced by many users the most perfect indexed Coupon Book yet devised.

Special Representatives

Our traveling representatives cover every State of the Union, calling regularly on Company Stores and Commissaries, and are fully versed in the merits of the Coupon Book System and its application to your particular needs. We will be glad to instruct them to call on you if you will let us know you are interested.

Full particulars, samples and prices cheerfully furnished to anyone interested, on application.

CHANDLER & TAYLOR COMPANY

Main Office and Factory
INDIANAPOLIS, INDIANA

Engineers, Founders, Machinists

Products

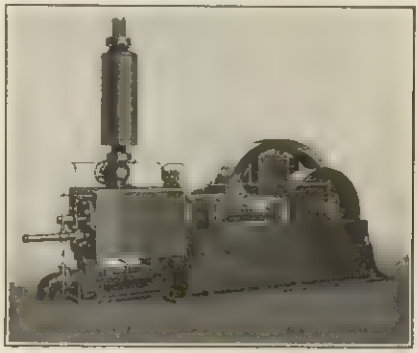
Prosser High Economy Engines—75 to 1600 H. P.
Controlled Compression Engines—75 to 1600 H. P.
Counterflow Engines—75 to 1600 H. P.
Single Valve Engines—40 to 600 H. P.
Open Type Automatic and Throttling Engines—25 to 250 H. P.
Variable Speed Engines—up to 10 to 1 ratio.
Low Pressure Engines.

Prosser High Economy Steam Engines

The Prosser engine is a steam jacketed counterflow engine which is showing unusual degrees of economy.

Tests by Prof. E. F. Miller of the Institute of Technology in Boston showed a Rankin efficiency of 83 per cent on an engine using saturated steam and exhausting to the atmosphere and 88.7 per cent on the same engine with 86 degrees of superheat.

At Purdue University a Rankin ratio of 82.3 per cent was obtained on an engine carrying 7 lbs. back pressure.

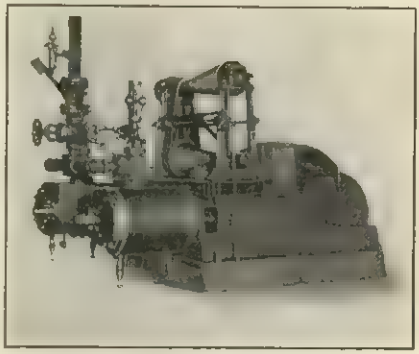


Corliss engines with saturated steam and atmospheric exhaust will average about 60 per cent of the Rankin cycle, while with a single valve automatic engine, 50 per cent is a fair average.

Especially high Rankin performances are shown under back pressure and on this account this engine is especially adapted for conditions where the exhaust is used for heating and process work.

They give correspondingly high efficiencies operating condensing. The American Shipbuilding Co. has taken a license to build Prosser engines when used to propel ships and these will all be operated condensing.

The Prosser engine has the cylinder barrel and heads and also the piston jacketed with high pressure steam. Steam jacketing itself is not new, but in the Prosser engine, the jacketing is so correlated with the other functions of the engine as to give the extremely economical results which are obtained. Steam jacketing prevents condensation,



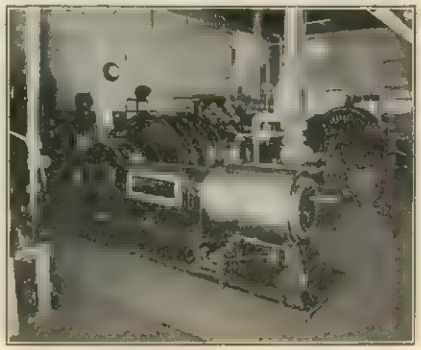
and therefore eliminates re-evaporation. Condensation and re-evaporation are the greatest foes to economy.

The steam is handled by two piston valves. The main valve under control of the governor controls the admission, cut-off and release. The auxiliary valve under control of a fixed eccentric controls the compression.

The Prosser engine has proven by carefully made tests to be the most economical steam engine yet developed.

We build these Prosser engines with constant speed governor for all ordinary power purposes and likewise build them for variable speed control. This fits them especially for use in connection with the operation of mine fans where a varying speed is desired and where economy is more and more being considered.

We still manufacture our complete line of single valve engines, both automatic and throttle governed which while they cannot be favorably compared in economy of steam to the Prosser type, are nevertheless at least as economical as any other engine of the same type.



Allis-Chalmers Manufacturing Company

MILWAUKEE, WISCONSIN

DISTRICT OFFICES

Atlanta, Ga., 1104-1106 Healey Bldg.
Baltimore, Md., 304 Hearst Tower Bldg
Birmingham, Ala., 1010-1012 Brown Marx Bldg
Boston, Mass., 723-724 State Mutual Bldg
Buffalo, N. Y., 574-576 Ellicott Square Bldg
Charlotte, N. C., 1118 Johnston Bldg
Chicago, Ill., 1321 Peoples Gas Bldg.
Cincinnati, O., 1720 First National Bank Bldg.
Cleveland, O., 1811 Cleveland Discount Bldg.
Dallas, Texas, 1816-17 Magnolia Bldg
Denver, Colo., Symes Bldg.
Detroit, Mich., 1116-1112 Ford Bldg.
Duluth, Minn., 709 Alworth Bldg
Indianapolis, Ind., 805 Merchants Bank Bldg.
Kansas City, Mo., 1410-1412 Waldheim Bldg.
Lakeland, Fla., 801 Callahan Court
Los Angeles, Cal., 623-625 Title Insurance Bldg
Milwaukee, Wis., West Allis Works.
Minneapolis, Minn., 707-711 Metropolitan Life Bldg.
New Orleans, La., 719-723 Maison Blanche Bldg.
New York, N. Y., 50 Church Street.
Philadelphia, Pa., 711-712 Atlantic Bldg
Pittsburgh, Pa., 1207-1210 Park Bldg.
Portland, Ore., 505-508 Lumbermen's Bldg
St. Louis, Mo., 2184-2189 Railway Exchange Bldg.
Salt Lake City, Utah, 214-15-16 Kearns Bldg
San Francisco, Cal., 741-751 Rialto Bldg.
Seattle, Wash., 115 Jackson Street.
Toledo, O., 819 Ohio Bldg.
Wilkes-Barre, Pa., 904 Coal Exchange Bldg.
Canadian Representatives Canadian Allis-Chalmers, Ltd., Toronto
Foreign District Offices: London, Paris, Oruro, Bolivia, and Santiago, Chile

Power and Electrical Equipment

Products

Power Equipment—Steam and Hydraulic Turbines; Steam, Gas and Oil Engines; Condensers; Auxiliary Power Plant Equipment; Electric Power Units complete with any type of prime mover.

Electrical Equipment—Motors for all purposes; Generators and Generating Sets; Transformers; Synchronous Converters; Balancers, Boosters and Equalizing Sets; Frequency Changers; Synchronous Condensers; Switchboards; Motor Starters.

Industrial Machinery — Steam and Electric Hoists, see page 577. Centrifugal Pumps and Pumping Units, see page 738. Mining and Metallurgical Machinery. Crushing and Cement Making Machinery. Pumping Engines. Geared and Plunger Pumps; Oil Pipe Line Pumps. Industrial Air Compressors. Power Transmission Machinery such as Pulleys, Sheaves, Shafting, Hangers, Gears, Couplings, Clutches, Rope Drives, Speed Reducers, etc.; Sawmill Machinery; Timber Preserving Machinery; Heavy Forgings, Perforated Metals, Flanged and Pressed Plate Work; Gasoline Engine Generating Sets; Farm and Special Road Tractors.

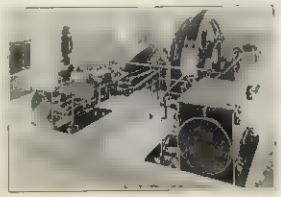
Steam Turbines

Allis-Chalmers steam turbine and alternator units, condensing, non-condensing, extraction,

5000 K. W. 3600 R. P. M. Turbo-Alternator Unit

bleeder, mixed pressure and low pressure types, built in sizes from 200 K. W. up.

Allis-Chalmers steam turbines are of the horizontal reaction type, highly efficient, simple in design, accessible for inspection and built for continuous service.



Cross-Compound Corliss Engine with Direct Connected Generator

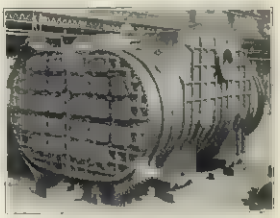
Corliss Engines

The Corliss Engine is the most reliable and efficient of reciprocating engines.

Our full line of engines and 50 years' experience enable us to furnish an engine best suited to meet all conditions.

Condensers

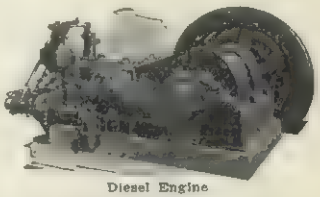
These are built in the surface, jet and barometric types and include a complete line of condenser auxiliaries; vacuum pumps, evactors, etc.



Surface Condenser

Diesel Engines

The Allis-Chalmers oil engine combines all the economical advantages of the Diesel system, together with special constructive features essential for reliability in service. The engine is of the four-stroke cycle horizontal type with an open fuel nozzle and a low pressure starting system.



Diesel Engine

High Pressure Mine Pumps

Duplex, double-acting, outside end packed types either steam or electrically driven through herringbone reduction gears or direct connected. Built for any capacity up to 2,000 g.p.m. and heads up to 2,500 feet.

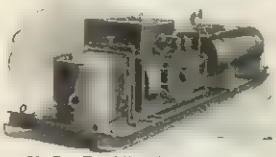
High Pressure Mine Pump

Whatever your pumping conditions, we invite your inquiries, and our engineers with years of practical experience will help solve your pumping problems.

Air Compressors

These are built in the stationary and portable types and for motor or belt drive. Sizes suitable for mining service range from 11 to 150 cu. ft. capacity.

150 Cu Ft. Stationary Air Compressor

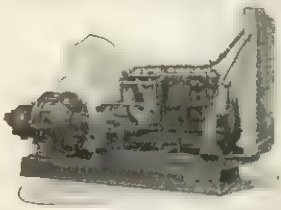


50 Cu. Ft. Mine Portable Air Compressor

Alternating and Direct Current Generators

Allis-Chalmers generators are built in the belted type or direct connected type for engine, steam turbine, or waterwheel drive, both horizontal and vertical for the latter drive. Ratings and speeds are adapted to the various types of prime movers. Complete units can be furnished with any type of prime mover, thereby giving purchaser undivided responsibility.

Gasoline Driven Electric Generators

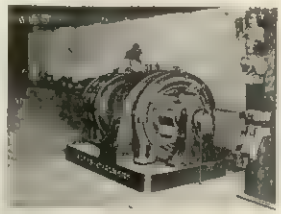


62[illegible] Kv-a Standby Generator Unit Driven by Gasoline Engine

These units are used in the small sizes for lighting villages, communities, clubs, etc. The larger sizes are used mostly for standby units in industrial work such as mining operations, cement mills, etc., to insure continuous operation in case of failure of power from the central station. They are built in direct current in capacities of from 5 K. W. to 125 K. W. They are also furnished for alternating current in capacities of from 50 K. W. to 125 K. W. inclusive.

Motor Generator Sets

Motor generator sets are built in all standard sizes for mine service. The special moisture-proof form wound coils, the correct and liberal design of all parts, assures large momentary overload capacity.



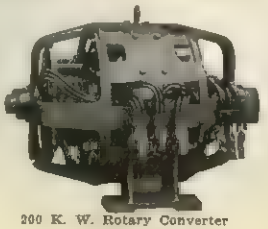
150 K.W. 1170 R.P.M. Induction Motor-Generator Set for Battery Charging

Combinations are built of self-starting synchronous motors, induction motors, direct current, two or three wire generators, etc.

Synchronous or Rotary Converters

Standard synchronous converters, or "rotaries," for industrial or mining service deliver 250 to 275 volts direct current, when operating from the alternating current supply system.

They are built for ratings of 100 K.W. and larger, in the commercial pole type, and for 60 cycle and 25 cycle systems.



200 K. W. Rotary Converter

Polyphase Induction Motors

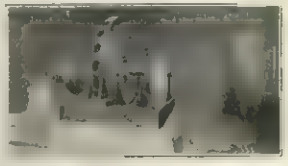
Made in standard ratings and speeds in both squirrel cage and slip ring types, vertical or horizontal, for belt drive or direct connection. They are of very rugged construction and therefore adapted to severe service conditions. Shafts are large and rigid while the bearings are liberal in size. Moistureproof coils are used.

Type "AR", Steel Frame, Squirrel Cage Induction Motor

Slip ring motors are for use where the starting conditions are severe and starting current must be kept low, and for varying speed requirements.

Synchronous Motors and Condensers

Synchronous motors are especially suited for driving generators, large air compressors, pumps, line shafts and other constant speed apparatus where the starting conditions are not severe. The corrective effect which they exert on the power system makes them particularly desirable for alternating systems where the power factor is low. Built for ratings of 50 H. P. and larger.



350 H. P. 212 R. P. M. Synchronous Motor Driving Mine Fan

Direct Current Motors

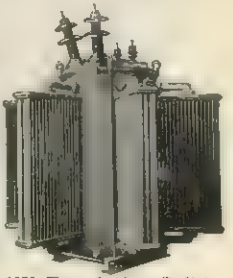
Type "E" Motors are made in ratings and speeds corresponding to those of constant speed induction motors, as well as adjustable speed ratings, in capacities up to 175 H. P. They are of rugged construction with commutating poles insuring sparkless commutation, dustproof bearings, thorough ventilation, windings treated to resist oil and moisture. Larger ratings built in the pedestal bearing type.

Direct Current Motor, Type "E"

Transformers

These transformers are designed for power and lighting service. They are built in all commercial sizes for lighting and power transmission, and for use in connection with Rotary Converters.

They are furnished in self-cooled, water cooled, and air cooled types, wound for all voltages and frequencies, embodied in mining service.



1250 Kv-a. Outdoor Radiator Type Power Transformer

De Laval Steam Turbine Company

Main Offices and Works: TRENTON, N. J.

SALES OFFICES

Atlanta, Ga.	Chicago, Ill.	Havana, Cuba	Los Angeles, Cal	New York, N. Y	San Francisco, Cal
Birmingham, Ala.	Cleveland, Ohio	Houston, Tex.	Missoula, Mont	Philadelphia, Pa	Seattle, Wash
Boston, Mass.	Denver, Colo.	Indianapolis, Ind	Montreal, Que	Pittsburgh, Pa	Toronto, Ont
Charlotte, N. C.	Duluth, Minn.	Kansas City, Mo	New Orleans, La.	Salt Lake City, Utah	Vancouver, B. C

Products

Steam Turbines; Centrifugal Pumps; Centrifugal Blowers and Compressors; Speed Reducing Gears; Hydraulic Turbines; Flexible Couplings and Special Centrifugal Machinery.

Centrifugal Pumps

De Laval Centrifugal Pumps are characterized by conservative speeds, high class materials, construction on a limit-gage interchangeable basis, guaranteed efficiency and capacity, and a comprehensive system of testing, by which the fulfillment of these guarantees is demonstrated.

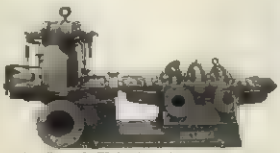
High efficiency is promoted by the use of **De Laval labyrinth wearing rings**, which prevent leakage from discharge to suction. In contrast to the ordinary flat ring, they combine long life and ample clearance.

The low starting torque and high efficiency of De Laval centrifugal pumps are of great value where pumps are to be driven by electric motors, as is also the self-limiting power characteristic. De Laval pumps can be driven by self-starting synchronous motors.

The **De Laval Series Pump** is particularly recommended where a multistage pump is required. The special form of casing gives high efficiency without recourse to diffusion vanes. The impellers are of the double suction type and are perfectly balanced.

De Laval Mine Pumps are specially constructed of acid resisting metal.

De Laval Boiler Feed Units are designed, manufactured and tested, complete, in one plant and under the supervision of one staff of engineers, and sold and guaranteed by one organization.



De Laval Velocity Stage Turbine Driven Boiler Feeder

Steam Turbines

De Laval turbines are built for all steam conditions, such as high pressure, condensing and non-condensing, back pressure, bleeder and mixed flow service. They are also adapted to driving machines at all speeds, either directly connected or through the De Laval double-helical speed-reducing gear.

De Laval Geared Turbine Driving Direct Current Generator, 3750 Kw

The De Laval Velocity Stage Turbine has been designed to operate on high pressure, high temperature steam. The steam chest and governor valve body, which are the only parts with which the live steam comes in contact, are incorporated in the cast steel casing cover, so that heat is not readily conducted to the bearings, rendering water cooling unnecessary. De Laval velocity stage turbines are made in all sizes up to 1200 H. P.

De Laval Pressure Stage Turbines—Built in capacities up to 15,000 H. P., give the highest obtainable efficiencies. The highest possible duties are obtained when driving De Laval centrifugal pumps and compressors.

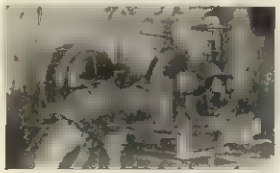
De Laval Flexible Coupling

Flexible Couplings

The De Laval rubber bushing flexible coupling has been developed and standardized by over twenty years' use in connection with high speed and moderate speed machinery and is manufactured on an interchangeable basis by modern limit-gage methods.

Guarantees, etc.

All De Laval apparatus is built on a limit-gage, interchangeable basis. The performance of every machine is guaranteed, both as to capacity and efficiency, and a complete test is carried out before shipment.

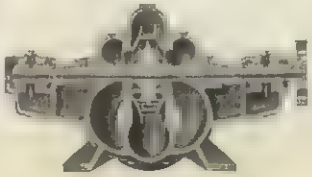


De Laval centrifugal pump driven by a three-phase induction motor pumping 1,700,000 gal. of water per day against a head of 115 ft.

De Laval Series Multistage Centrifugal Pump

De Laval Series Pump installed four years ago in a large coal mine. 720,000 gal. per day against 210 ft head.

De Laval motor driven, two-stage, 5-in. series pump, delivers 400 gal. per min. through a drill hole to the surface against a head of 300 ft

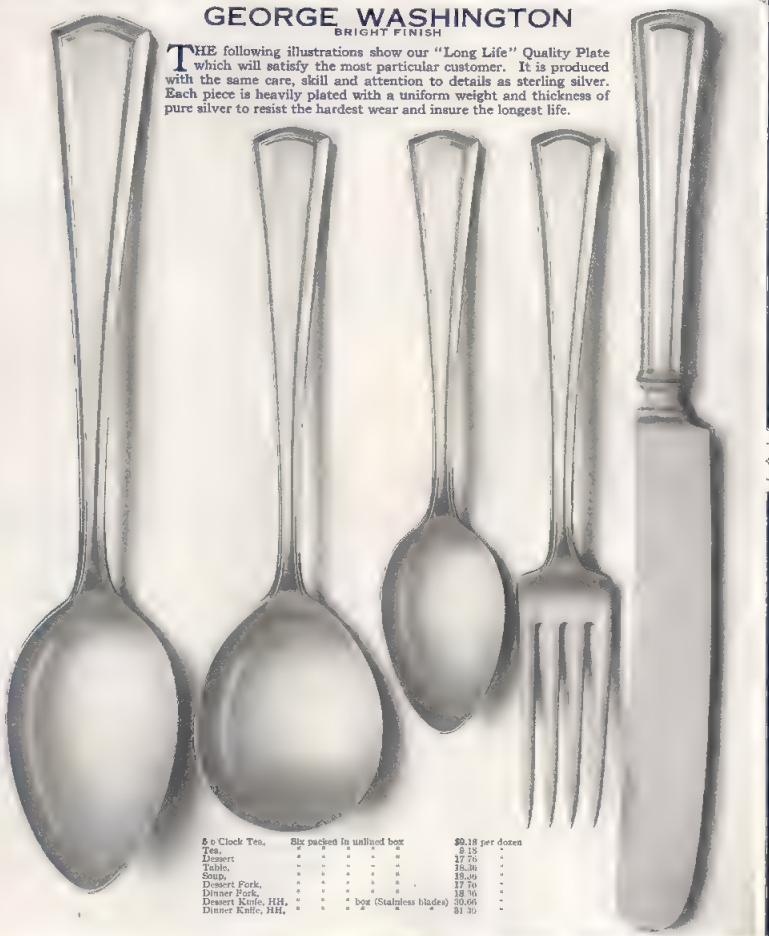


De Laval Single Stage Pump

This De Laval pump has been delivering 2,000 gal of mine water per min. against 253 ft. head at 1165 r.p.m since the later part of 1920

GEORGE WASHINGTON
BRIGHT FINISH

THE following illustrations show our "Long Life" Quality Plate which will satisfy the most particular customer. It is produced with the same care, skill and attention to details as sterling silver. Each piece is heavily plated with a uniform weight and thickness of pure silver to resist the hardest wear and insure the longest life.



5 o'Clock Tea,	Six packed in unlined box	$9.18 per dozen
Tea,	" " " " "	9.18 "
Dessert	" " " " "	17.76 "
Table,	" " " " "	18.36 "
Soup,	" " " " "	19.00 "
Dessert Fork,	" " " " "	17.70 "
Dinner Fork,	" " " " "	18.76 "
Dessert Knife, HH,	" " " box (Stainless blades)	30.66 "
Dinner Knife, HH,	" " " " "	31.30 "

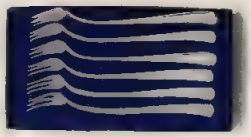
ALVIN PATENT

GEORGE WASHINGTON

BRIGHT FINISH

INDIVIDUAL SALAD FORK SET
Per set $7.15

FIVE O CLOCK TEAS
Six in lined box $4.90
Six in plain box 5.40



OYSTER FORK SET
Per set $6.05

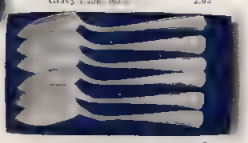
BOUILLON SPOON SET
Per set . . . . . $

SIX ICED TEA SPOONS
Per set $6.68

CREAM LADLE
Cream Ladle, each $2.23
Gravy Ladle, each 2.02

BUTTER SPREADER SET
Per set $7.50

BUTTER KNIFE
Each $1.85

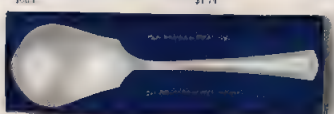


ORANGE OR GRAPEFRUIT SPOON SET
Per set $5.54

PICKLE OR OLIVE FORK
Each $1.74

SUGAR SHELL
Each $1.64

JELLY SERVER
Each $2.10



BERRY SPOON

BUTTER KNIFE AND SUGAR SHELL
Per set $5.45

SIX COFFEE SPOONS
Per set $4.50

COLD MEAT FORK
Each $2.15

SHORT HANDLE BABY SET
Spoon and Pusher $2.40

3 PIECE CHILD'S SET
Hollow Handle Knife, per set $4.42

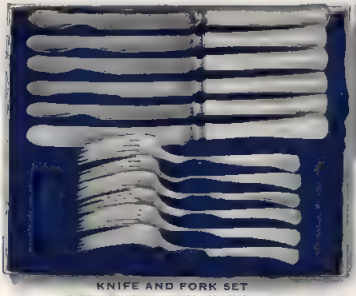
SUGAR TONGS
Each $2.37

BABY SPOON
Each $1.25

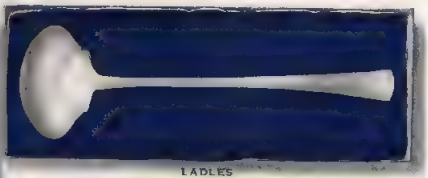
TOMATO SERVER (not illustrated), Hollow Handle $6.68; Flat Handle $4.17

ALVIN PATENT

GEORGE WASHINGTON
BRIGHT FINISH



KNIFE AND FORK SET
[illegible] Hollow Handle Knife and Hollow Handle Fork
Dinner, per set, $24.44 Dessert, per set, $24.84



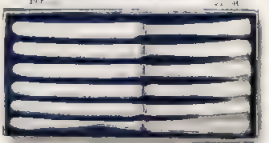
LADLES
Cream [illegible] $ [illegible] Gravy, each, $6.92
Soup [illegible] $9.03

HOLLOW HANDLE PIE SERVER

HOLLOW HANDLE ICE CREAM KNIFE
Each [illegible] $7.95

SIX HOLLOW HANDLE FRUIT KNIFES
Per set [illegible]

STEAK SET
3 pieces, per set, $ 7.18 2 pieces, per set, $9.18
Knife blade [illegible] inches Knife blade [illegible] inches



SIX HOLLOW HANDLE ORANGE KNIVES
Per set [illegible] $10.29

LARGE CARVING SET
2 Piece Carving Set, Knife Blade [illegible] inches, per set $ 8.08
3 Piece Carving Set, Knife Blade [illegible] inches, per set 10.60
6 Piece Carving Set, Large Knife Blade 9 inches, Steak, Knife Blade 7 inches, per set 22.52
2 Piece Game Set, Knife Blade 7 inches, per set 13.08

CHOP SET
[illegible] inches
2 pieces, Knife
[illegible] inch
Hollow Handle
$6.88

CHEESE SERVER
Hollow Handle
each, $2.44

BREAD KNIFE
Hollow Handle,
each, $6.14

For prices of items not illustrated see complete price list

No. 17. GENUINE MAHOGANY CHEST
Holds 26 Pieces—1 Drawer
6 Teas, 6 Spoons, 6 Forks, 6 Knives, 1 Butter Knife, 1 Sugar Spoon.
Price of set complete with chest
Dessert size, $61 20
Dinner size, $37 14
Price of chest only, $10.00

No. 19 GENUINE MAHOGANY CHEST
Holds 32 Pieces 1 Drawer
12 Teas, 6 Spoons, 6 Forks, 6 Knives, 1 Sugar Spoon, 1 Butter Knife
Price of set complete with chest
Dessert size, $89 84
Dinner size, $50 78
Price of chest only $14 10

No. 21 GENUINE MAHOGANY CHEST
Holds 45 Pieces 1 Drawer
12 Teas, 3 Table Spoons, 6 Dessert Spoons, 6 Dinner Forks, 6 Dinner Knives, 6 Butter Spreaders, 1 Sugar Spoon, 1 Butter Knife, 1 Cold Meat Fork, 1 Berry Spoon, 1 Gravy Ladle, 1 Pickle Fork.
Price of set complete with chest $94.44
Price of chest only, $26.66

No. 34. LEATHERETTE CHEST
26 Piece Compact
6 Teas, 6 Dessert Spoons, 6 Dessert Knives, 6 Dessert Forks, 1 Butter Knife, 1 Sugar Spoon
Price of set complete with chest, $47 44
Price of chest only, $6 26

No. 35. LEATHERETTE CHEST
26 Piece, Compact (Illustrated)
6 Teas, 6 Dinner Forks, 6 Dinner Knives, 6 Table Spoons, 1 Butter Knife 1 Sugar Spoon
Price of set complete with chest, $48.38
Price of chest only, $6 26

No. 36. GENUINE MAHOGANY CHEST
50 Piece, Compact
12 Teas, 12 Dessert Forks, 12 Dessert Knives, 12 Dessert Spoons, 1 Butter Knife, 1 Sugar Spoon.
Price of set complete with chest $99 76
Price of chest only, $20.00

No. 37 GENUINE MAHOGANY CHEST
50 Piece Compact
12 Teas, 12 Dinner Forks, 12 Dinner Knives, 12 Table Spoons, 1 Butter Knife, 1 Sugar Spoon.
Price of set complete with chest $101 00
Price of chest only, $26 66

No. 35. LEATHERETTE CHEST

A complete Price List of all items of ALVIN (Long Life Plate) made in LUXOR, GEORGE WASHINGTON, MOLLY STARK, LANCASTER & VICTORY PATTERNS

SPOONS

Baby, short handle	$1 25 Each
Baby, curved handle	1 25 "
Berry	3 76 "
Bouillon	17 12 Doz
Coffee	9 18 "
Dessert	14 76 "
Iced Tea	13 36 "
Olive	2 40 Each
Orange	11 88 Doz
Soup	18 36 "
Sugar	1 64 Each
Table	18 36 Doz
Tea, 5 o'clock	9 18 "
Tea, regular	9 18 "

FORKS

Baby, short handle	$1 25 Each
Child's	13 36 Doz.
Cold Meat, large	2 44 Each
Cold Meat, med. *(Geo. Wash and Luxor only)*	2 15 "
Dessert	17 76 Doz.
Dessert, small *(Molly Stark only)*	15 76 "
Dinner	18 36 "
Ind. Salad, Pastry	13 36 Doz
Oyster	12 10 "
Pickle or Olive	1 74 Each

KNIVES

Butter Knives	$1 85 Each
Butter Spreaders	19 80 Doz
Medium Knives, solid handle *(Molly Stark and Lancaster only*	17 94 "
Jelly Knives	2 10 Each
Sugar Tongs	2 37 "
Tomato Server H. H.	3 17 "

LADLES

Cream, large	$2 23 Each
Gravy	2 90 "
Soup Ladle *(Geo Wash and Molly Stark only*	9 04 "

HOLLOW HANDLE CUTLERY

Bread Knife	$3 14 Each
Cheese Cutter	2 44 "
Child's Knives	30 44 Doz
Carving Set 3 piece	10 60 Set
Carving Set 5 piece	32 52 "
Chop Set 2 piece	6 95 "
Dessert Knives, stainless blades	30 60 Doz
Dessert Knives, small *(Molly Stark only)*	20 02 "
Dinner Knives, stainless blades	41 30 Doz
Fruit Knives	26 80 "

HOLLOW HANDLE CUTLERY, Continued

Game Set, 2 piece	$13.08 Set
Ice Cream Knives	7 93 Each
Orange Knives	28 48 Doz
Pie Server	3 28 Each
Steak Set 2 pieces	9 18 Set
Steak Set 3 pieces	14 78 "
Tomato Server	6 68 Each
Dessert and Dinner Knives have Alvin Stainless Blades	

SETS

Baby Spoon and Fork	$2.50 Set
Butter Knife and Sugar Spoon	3 48 "
Child's 3-piece H. H. Knife	3 42 "
Olive Set, 2 piece	3 84 "
Salad, O. W., H. H.	9.26 "
6 Knives & Forks, Dinner size, stain ess blades	23.44 "
6 Knives & Forks, Dessert size, stainless blades	20 81 "
6 Medium Knives, solid handle, and 6 Dessert Forks *(Molly Stark and Lancaster only)*	18.44 "
6 Small Dessert Knives, H. H., and 6 Small Dessert Forks *(Molly Stark only)*	22 98 "

All fancy pieces furnished in Handsome Gift Boxes
All Patterns furnished in 26 piece sets in velvet lined Gift Chest without extra charge for the chest
Alvin Stainless Steel Blades are guaranteed by Good Housekeeping Institute

The Atlas Car & Manufacturing Company

Factories and General Offices

CLEVELAND, OHIO, U. S. A.

Branch Offices Located at

Philadelphia.....20 South 15th St. Pittsburgh.....Benedum-Trees Bldg.
New York.....Woolworth Bldg. Chicago.....53 W. Jackson Blvd.
San Francisco.....Wells Fargo Bldg.

Engineers — Manufacturers

Products

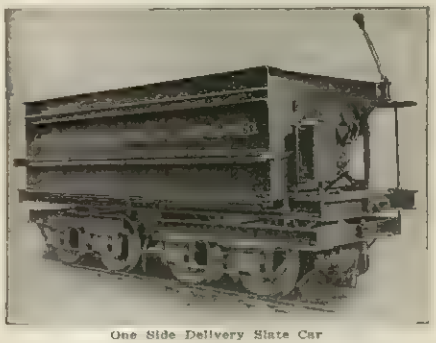
Atlas Storage Battery Locomotives; Trolley Locomotives; Dump Cars.

A complete line of cars for all purposes, and have illustrated here some of our types. These cars are electrically propelled and are built with a view of obtaining the greatest amount of strength, efficiency and economy in operation.

One Side Delivery Slate Car

This car is made in any desired capacity.

The electrical equipment is the best obtainable. The motors are of the enclosed type such as are used on mining locomotives. All wiring is placed in conduit to protect from abrasion, and conduit is securely clamped to car.



One Side Delivery Slate Car

The wheels are of cast iron, deeply chilled, and driving wheels have ground treads to insure maximum traction. Body and frame of car are rigidly braced and riveted.

Gears have accurately cut teeth.

Bearings are of a high grade of bronze.

Controller, door opening lever, brake wheel, etc., are placed where they will be most convenient for the operator.

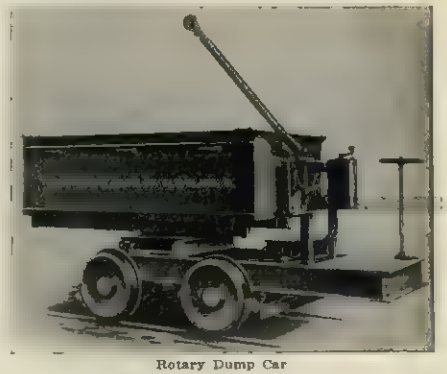
The dimensions of a standard One Side Delivery Slate Dump Car of 200 cubic feet capacity are:

Height, top of rail to top of car	7½ feet
Length, over all	18 feet
Width, over all	7½ feet

Rotary Dump Car

At the top of the next column we show our Rotary Dump Car.

This car is made in sizes up to 200 cubic feet capacity.



Rotary Dump Car

It is equipped with a hand brake, enclosed motor and drum type controller.

Rocker Side Dump Car.

Here is shown our Rocker Side Dump Car.

Rocker Side Dump Car

This car is equipped with hand brake, spring draw-heads and chilled wheels. The car will dump clean, either wet or dry material. Can be equipped with motor if desired.

General

While the cars here illustrated are equipped for use with trolley wire, they can be arranged for storage battery, where the trolley wire or third rail is undesirable.

Engineering Service

If you will send us information relative to your requirements and conditions at your mine, our engineers, made competent by years of experience, will design equipment best suited for your work.

THIS SERVICE COSTS YOU NOTHING.

The Connellsville Mfg. & Mine Supply Co.

Main Office and Works: CONNELLSVILLE, PA.

Designers and Builders of

Slate Larries and Other Cost Reducing Equipment

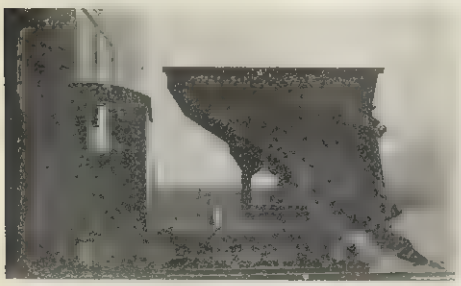
Our Motto:—Reliability—Service.

If you want to make a considerable reduction in the cost of your coal, you can do so by putting your slate and rock over the "dump" on the outside by means of the Lepley Patent Slate and Rock Dump Cars, which are built in five, ten and fourteen tons capacity.

They are electrically driven with 25 to 60 H. P. motors and carry from five to fourteen tons of material, which is ready to slide over the dump on either side, or ahead, as soon as the gate is opened.

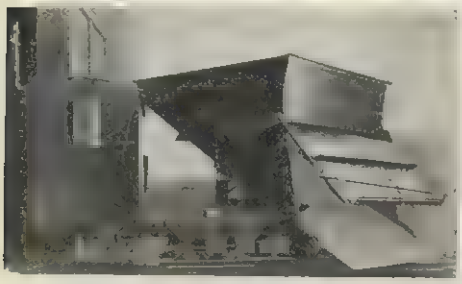
They will travel from 800 to 900 feet per minute on well-laid tracks on ordinary grades for any distance to a slate dump, and from 500 to 600 feet per minute fully loaded up to a 4% grade on the dump, and the operator by himself can swing the hopper anywhere he wants to, open the gate, dump the load, close the gate and right the hopper for the return trip and re-loading in from one to one and a half minutes without getting off the car, by means of the gearing and levers grouped for convenient operation on the open platform shown on cuts No. 184 and No. 185, and which, if desired, are enclosed in a roomy and comfortable cab, as shown on cut No. 175.

Sand boxes and a lever operated drum and band brake are provided on all of these larries.

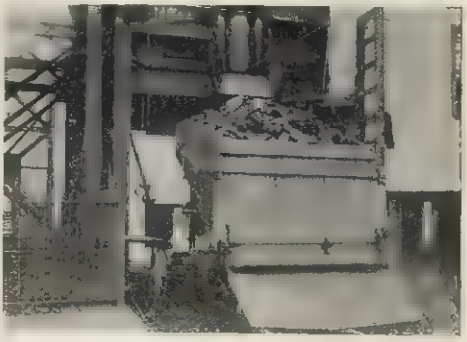


Cut No. 175. Our 12-ton larry with hopper positioned for running to and from the dump, in which position its load is evenly distributed over both track rails and the four wheels for safe running stability.

Cut No. 176. Our 12-ton larry with empty hopper set to discharge its load on the side of the track away from you.

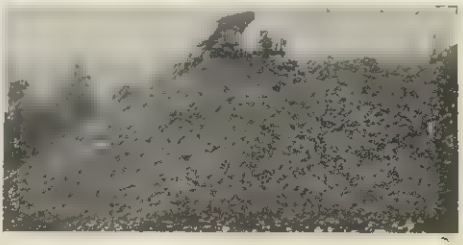


Cut. No. 177. Our 12-ton larry with empty hopper set to discharge its load on the side of the track towards you, showing the discharging gate held open by the man in the cab



Cut No. 184. Our 10-ton larry at the loading point under the rock bin at a tipple loaded and ready to start towards the slate dump.

Cut No. 185. Our 10-ton larry out on the slate dump, discharging its load on one side of the track and operated by one man on the platform.



Cut. No. 186. Our 10-ton larry, discharging its load over the end of a slate dump 60 feet high and rising on a 4% grade and operated by one man on the platform.

Illustration shows a pair of our standard wheels and axles with motor and brake wheel mounted on one axle and the brake wheel mounted on the other axle without the motor. This is our standard arrangement for 5 and 10-ton larries, but on the larger larries we mount a brake wheel and motor on each axle.

Capacity in Tons	Wt. of Larry Lbs.	Wt. of elect. Equipment	Cap. in Cu. Ft. L. Full Lbs.	Motor Capacity H.P.	Full Load Hauling Speed
5	16500	2700	125	38	500 ft. on 7%
10	21000	4000	235	67	500 ft. on 7%
12	25000	6200	300	76	500 ft. on 7%
15	28000	6200	375	76	500 ft. on 6%
20	38000	7000	450	134	500 ft. on 6%
30	59000	8800	675	150	500 ft. on 5%

The 5-ton larry is equipped with one 38 H. P. motor and suitable equipment.

The 12 and 15-ton larries are each equipped with two 38 H.P motors for the traction drive, one on each of the two axles.

The 20-ton larries are equipped with two 67 H. P. motors.

The 30-ton larries are equipped with two 75 H. P. motors.

The 5 and 10-ton larries are intended to work on grades up to a maximum of about 8% and the 12 ton larries a maximum of 10%

The 15-ton larry a maximum of approximately 8%. The 20-ton larry a maximum of 9 to 10%. The 30-ton larry a maximum of 7 to 8%.

All of these motors are geared so as to give these larries a speed of from 700 to 800 ft. per minute on fairly level grades and from 400 to 600 ft. on the heavier grades on the slate dump. The speed of course depends somewhat upon the grade inasmuch as all of these motors are series wound

The 5 and 10-ton larries are usually built without cabs and are hand operated throughout

All of the larger larries from 10 tons up are provided with cabs and small motors with controllers for operating the turntable and discharging gate of the larries.

On the 20 and 30 ton larries we provide an extra motor for operating the brake in addition to the hand lever operation.

We prefer to build all these larries on standard railroad gauge and have arranged with the motor manufacturers to furnish all of these motors, up to and including the 20-ton capacity with 5" dia. axle bearings, and the 30-ton capacity with 7" dia. axle bearings.

Illustration shows the top and bottom turntables for these larries. Both top and bottom members are made out of heavy cast iron ribbed castings with machined roller races and supplied with a series of turned cone-shaped rollers.

The two turntables are centered and held together by a hollow king bolt through which the rope for operating the discharging gate passes.

The following equipments are suitable for the various capacities of larries.

1 to 5-Ton Larries

1—5-ton 250 volt, 38 H. P. larry equipment consisting of the following:
1—HM-839-B, 250 volt, motor with 5" axle bearings complete, with pinion, gear, etc., gear bored to 5½" dia
1—R 206 controller with handles.
1—Rheostat.
1—Larry trolley
1—Circuit breaker.
125 feet wiring cable

1 to 10-Ton Larries

1—10-Ton, 250-volt, 67 H.P. Larry equipment consisting of
1—HM 809-L, 250-volt motor, complete with 5" axle, pinion, gear, etc., Gear bore 5½" dia.
1—R 206 Controller with handles.
1—Rheostat.
1—Circuit Breaker.
1—Larry Trolley. 150 feet of cable

12 to 15-Ton Larries—Item 1.

2 HM-839-B, 38 H. P., 1 turn, 250 volt, motors complete with pinions, gears, gear covers, axle linings and grease pipes.
1—Set of motor tools.
8—Clasp connectors.
1 R-109-S Controller with handles.
1 RG Rheostat.
1 -MC-23-A Circuit Breaker
1—No. 2 Larry trolley with 8 foot pole.
300 feet No. 0 B & S car cable.

12 to 15-Ton Larries—Item 2.

5—CO-1803 2½ H. P., 650 R.P.M. (15 min. 55 deg. C), 230-volt, series wound motors having straight shaft extension of pinion end only, as per drawing M-1630227
5—CR-3100 drum controllers R-122,
5—CR 3132 Resistors
5—MR-21-A Circuit Breakers.
400 feet No. 9 B & S standard car cable.

20 Ton Larry—Item 1.

1—HM-809-L 1 turn, 250 volt, motors complete with pinions, gears, gear covers, axle linings and grease pipes.
1 Set of motor tools.
8—Clasp connectors
1 R 106 S controller with handles.
1—RG rheostat
1—MC 23 A circuit breaker.
1—No. 2 Larry trolley with 8 foot pole.
300 feet No. 0 B & S car cable

20-Ton Larry—Item No. 2

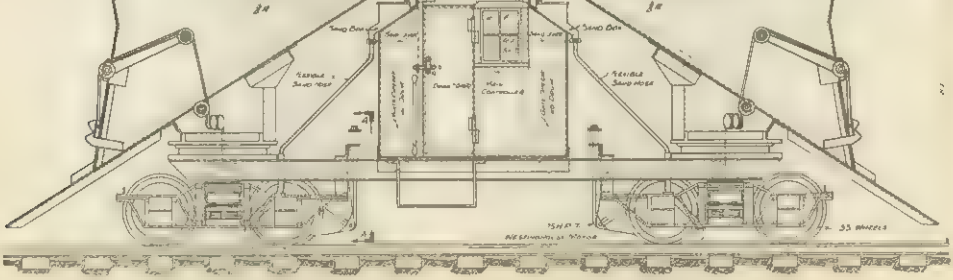
5—CO-1803-A2, 2½ H P., 650 R P M. (15 min. 55 deg. C), 230-volt, series wound motors having straight shaft extension on pinion end only, as per drawing M-1730227.
5—CR-3100 drum controllers R-122
5—CR-3132 Resistors
5—MR-21-A circuit breakers
400 feet No. 8 B & S standard car cable

30-Ton Larry—Item 1.

2—HM-839, 75 H. P. motors complete with standard gearing, axle linings, axle cap and welded gear case. Motor adapted for 7" axles.
1—Complete control equipment consisting of the following:
1—K-64 D controller with handles
1—RG rheostat
1—[illegible] 2 [illegible] contactor
1—DR-690 DJ relay.
1—Double barrier support with 2 barriers.
2 Bolt insulators with bushings, washers and nut.
1 [illegible] H switch with nameplate and fuse.
1—MR 2[illegible] A circuit breaker.
1—No. 2 Larry trolley with 8 ft. pole.
300 feet No. 0 B & S car wiring cable.

30-Ton Larry—Item No. 2.

1—CO-1803-A-2, 3 H. P. (30 min. 55 deg. C) 600 R.P.M., 250-volt series wound motors, each to be equipped with the following control
3—R-122 A controllers with handles.
5—Resistors
5 MA 13 B fuse boxes with fuses.
275 feet No. 6 B & S car wiring cable.



The Bloomsburg Locomotive Works

Main Office and Works

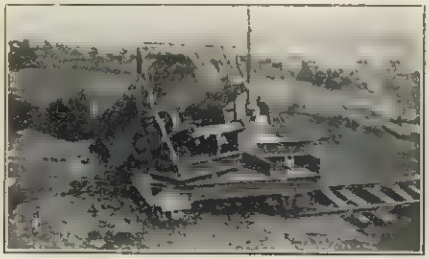
BLOOMSBURG, PENNA., U. S. A.

Manufacturers of

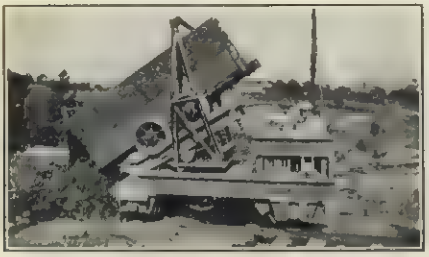
Industrial Locomotives and Slate Disposal Equipment

Products

Bloomsburg Patented Locotipplers; Slate Larries; Automatic Dump Cars; Mining Type Steam Locomotive; Gasoline Locomotives; Oil Burning Steam Locomotives.



Locotippler Dumping Car of Slate Over Corner This Grade is 7%



Locotippler Dumping Car of Slate at End

The Bloomsburg Patented Locotippler

This machine dumps the cars of slate after they are brought to the surface. The car is run on top of the Locotippler, which carries it out to the slate dump and dumps it. The Locotippler is self-propelled, also has motor for swinging and dumping mine car. Mine car may be dumped at any point within 180°. It builds a wide even bank, will climb a grade of 7% and with proper arrangement of track for loading and unloading mine car, one man can easily dump 75 cars per day without overtime. Thus reducing cost of slate disposal to a minimum.

Will dump any size mine car.

Automatically unloads empty car.

Weight—8600 pounds.

Gauge of track for Locotippler—56½ inches.

Gauge of track for mine car to suit.

Speed—5 M. P. H.

Larries and Automatic Dump Cars

We build a complete line of electric larries and automatic dump cars for slate, ore, transfer or burden bearing in sizes from 6 to 40 tons capacity.

The electric larries are built on single trucks up to 12 tons capacity, with one motor for propelling and one for operating the door. The larger sizes are built on double trucks with two motors for propelling and air compressor for operating the door and brakes.

The revolving type larries are built on single truck in capacities up to 12 tons, one motor for propelling and one for swinging and dumping. The center of gravity is low and in swinging to dump, the center of gravity is carried to the side opposite that on which you are dumping, thus eliminating as much as possible the possibility of the larry tipping over.

All electric equipment is of the best, wiring enclosed in conduit, center of gravity low, rides well on uneven track, speed and motive power to suit conditions, will climb grade of 8%.

Automatic Dump Car, Door Operated from Cab of Locomotive

Automatic Dump Cars

Built in capacities from 15 to 40 tons, door operated from cab of locomotive with steam or air. Door is automatically unlatched when steam or air is turned into the door operating cylinder. There are few moving parts, nothing to get out of order. Capacities 6 to 40 tons. Gauge of track, 36" to 56½".

Put Your Slate Disposal Proposition Up To Us

Bengal Oriental Rug Pattern No. 4Y885. (Description and Prices on second following page)

Bengal—Oriental Rug Pattern No. 4Y730. (Description and Prices on opposite page)

To China a country often regarded as barbarous we owe the invention of My Lady's Silks and many other of the highest forms of textile art The Chinese invented ink and printing with which we tell this story, gunpowder also and their splendid creations in rugs represent the highest expression of artistic genius Weaving is one of the many ancient arts of China the productions of her looms today find a ready market throughout the world and especially desirable in the better homes

KREMLIN SEAMLESS WILTON RUG. (CHINESE DESIGN). PATTERN 4X935. COLOR 279

The pattern reproduced in the color plate above was suggested by a hand made silk rug now in a private American collection This rug was brought to America soon after the Boxer Uprising and was perhaps stolen from the Imperial Palace

In the center of this design we have a circle of happiness composed of fretwork and peonies This is surrounded by a field of dove gray jaspé on which sprays of roses poppies and peonies rest The border design has various figures of birds flowers and water lilies

The Kremlin Seamless Worsted Wilton Rug is a remarkable achievement in the weaving of modern jacquard textiles The high quality of the worsted yarn gives the deep pile a silky lustrous sheen of a character unusual in domestic rugs ALL RUGS FRINGED

The seamless feature the beauty of designs and colors and their splendid durability have made our Kremlin rug famous and amazingly popular

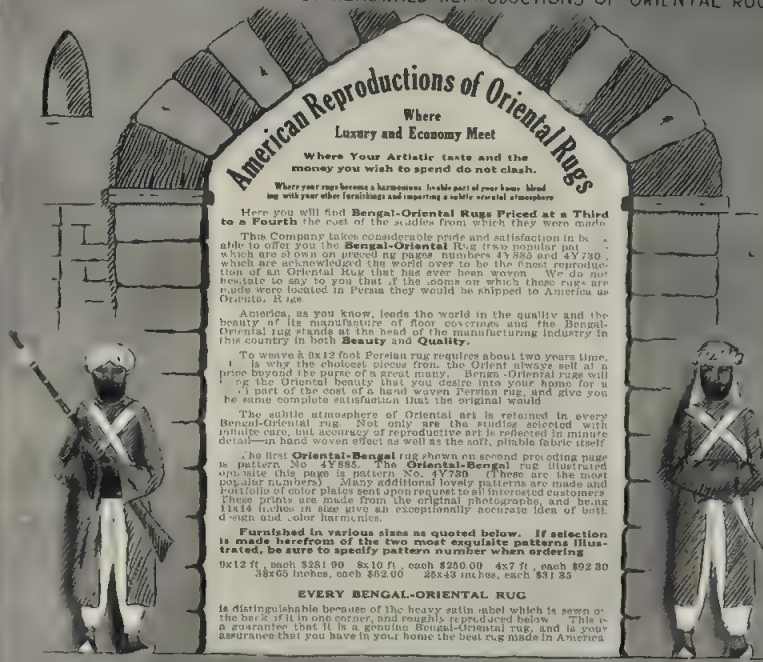
No 4X935 279A	As above in size 9 ft x 12 ft	Each $222 80
No 4X935 279B	As above in size 8 ft 3 in x 10 ft 6 in	Each, 207 80
No 4X935 279C	As above, in size 27 in. x 54 in	Each, 24 50

ALSO FURNISHED IN OTHER COLORS AND ABOVE SIZES AT SAME LIST PRICES

No. 4X935/313—Taupe Ground. Blue Border. Gold and Rose. Sage and Black
No 4X935 315 Mulberry Rose Ground Deep Mulberry Border Almond Blue and Sage
No 4X935 318 Light Brown Ground Dark Brown Border Green and Blue Old Rose Black

BENGAL-ORIENTAL RUGS

ACKNOWLEDGED WORLDS MOST RENOWNED REPRODUCTIONS OF ORIENTAL RUGS



American Reproductions of Oriental Rugs

Where Luxury and Economy Meet

Where Your Artistic taste and the money you wish to spend do not clash.

Where your rugs become a harmonious livable part of your home blend ing with your other furnishings and imparting a subtle oriental atmosphere

Here you will find **Bengal-Oriental Rugs Priced at a Third to a Fourth** the cost of the sadlies from which they were made

This Company takes considerable pride and satisfaction in be able to offer you the **Bengal-Oriental** Rug (two popular pat which are shown on preced ng pages numbers 4Y885 and 4Y780 which are acknowledged the world over to be the finest reproduction of an Oriental Rug that has ever been woven We do not hesitate to say to you that if the looms on which these rugs are made were located in Persia they would be shipped to America as Oriental Rugs

America, as you know, leads the world in the quality and the beauty of its manufacture of floor coverings and the Bengal-Oriental rug stands at the head of the manufacturing industry in this country in both **Beauty** and **Quality.**

To weave a 9x12 foot Persian rug requires about two years time, It is why the choicest pieces from the Orient always sell at a price beyond the purse of a great many. Bengal-Oriental rugs will ng the Oriental beauty that you desire into your home for a ri part of the cost of a hand woven Persian rug, and give you he same complete satisfaction that the original would

The subtle atmosphere of Oriental art is retained in every Bengal-Oriental rug. Not only are the studies selected with infinite care, but accuracy of reproductive art is reflected in minute detail—in hand woven effect as well as the soft, pliable fabric itself

The first **Oriental-Bengal** rug shown on second preceding page is pattern No 4Y885. The **Oriental-Bengal** rug illustrated opposite this page is pattern No. 4Y780 (These are the most popular numbers) Many additional lovely patterns are made and portfolio of color plates sent upon request to all interested customers These prints are made from the original photographs, and being 11x14 inches in size give an exceptionally accurate idea of both design and color harmonies.

Furnished in various sizes as quoted below. If selection is made herefrom of the two most exquisite patterns illustrated, be sure to specify pattern number when ordering

9x12 ft , each $281 90 8x10 ft , each $250.00 4x7 ft , each $92 30
36x60 inches, each $52.00 28x43 inches, each $31 35

EVERY BENGAL-ORIENTAL RUG

is distinguishable because of the heavy satin label which is sewn o the back of it in one corner, and roughly reproduced below This is a guarantee that it is a genuine Bengal-Oriental rug, and is your assurance that you have in your home the best rug made in America

BENGAL-ORIENTAL RUGS

PATENTED NOV 28TH 1916

ACKNOWLEDGED WORLD'S MOST RENOWNED REPRODUCTIONS OF ORIENTAL RUGS

A Leader Cane Department

One Dozen in a Bundle—No Less

N1500 N1509 N1513

No. N1500. Imported Jap Cane, nice appearance, thoroughly finished, enameled Jap stock, bent crook handle. These are heavy sticks and should not be compared with the light weight goods now on the market. Very serviceable and very popular seller. 100 in a bundle. No less sold. Per 100..... 1.20

No. N1509. Red, White and Blue Canes. Round shape wood heads. Heads are not fastened on canes, but come in separate bag. A very popular cane, substantially built. 100 in a bundle No less sold Per 100..... 2.85

No. N1513. Cane, maple stick, black finish, with enameled red ball top. Per dozen..... .45

N1519 N1523 N1529 N1534

No. N1519. Cane, maple stick, black finish, with black enameled barrel top. Per dozen..... .45

No. N1523. Cane, maple stick, black finish, knob shape turned head, enameled in red and purple assorted. Per dozen..... .45

No. N1529. Cane, maple stick, black finish, machine turned top, with ridges enameled, in colors, assorted purple and red. Per dozen..... .45

No. N1534. Cane, maple stick, in assorted bright colors, with ridged carved head top enameled in purple and red, assorted. Per dozen..... .50

N1526 N1697 N1696 N1698

No. N1526. Cane, maple stick, black finish, fancy turned head, finished in enameled imitation mottled celluloid. Per dozen..... .55

No. N1697. Cane, fancy turned head, gilt finish, maple stick; assorted colors.

Per dozen..... .35

No. N1696. Cane, good maple stick, with fancy ridged carved gilt finish head top. Per dozen.... .35

No. N1698. Cane, good maple stick, gilt finish with ball shape top. Per dozen..... .55

N1547 Assorted N1633 N1710

No. N1547. Canes, fancy turned wooden heads enameled in ivory and bone colors assorted, good maple sticks. Mahagony finish.

Per dozen..... .55

No. N1633. Cane, maple sticks, in assorted colors, with enameled ball top, mottled in variegated colors.

Per dozen..... .60

No. N1710. Patriotic Cane, hardwood stick, medium weight, cherry finish, lustre black finished head with red, white and blue celluloid flag top.

Per dozen..... Out

N1563 N1572 N1560 N1565

No. N1563. Cane, maple stick, assorted colors, white metal eagle claw top, silver finished, nickel ferrule. Per dozen..... .80

No. N1572. Cane, maple stick, in purple, maroon, etc., assorted, polished white metal bridled horse head top, nickel ferrule. Per dozen..... .50

No. N1560. Cane, maple stick, finished in purple, maroon, etc., assorted, white metal head, woodpecker design, nickel ferrule. Per dozen..... .80

No. N1565. Cane, maple stick, in purple, maroon etc., assorted, white metal oblong shape embossed design head, silver finished nickel ferrule.

Per dozen..... .90

N1558 Assorted N1552 N1584

No. N1558. Cane, maple stick, finished in purple, maroon, etc., assorted, with metal heads, silver finish, assorted, eagle, elephant and rabbit, nickel ferrule.

Per dozen..... .85

No. N1552. Cane, maple stick, finished in assorted colors, large size white metal dog head, silver finish, nickel ferrule. Per dozen..... .85

No. N1584. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, polished white metal top, large eagle claw design, nickel ferrule

Per dozen..... .85

Popular Canes at Lowest Prices

One Dozen in Bundle. No Less Sold

N1578

N1576

N1582

No. N1578. Cane, maple stick, assorted colors, silver finish, white metal heads, corrugated design, nickel ferrule. Per dozen ..... .85

No. N1576. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, polished white metal animal heads, bulldog, hound dog, etc., nickel ferrule. Per dozen ..... .85

No. N1582. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, polished white metal square bent horsehoof and ankle design, nickel ferrule. Per dozen ..... .85

N1612

N1611

N1579

No. N1612. Cane, maple stick, mahogany finish, purple, maroon, etc., with machine turned head, enameled in colors, assorted, nickel ferrule Per dozen ..... .90

No. N1611. Cane, maple stick, mahogany finish, purple, maroon, etc., with machine turned carved head, fancy design in assorted colors, nickel ferrule. Per dozen..... .90

No. N1579. Cane, maple stick, in purple, maroon, etc, assorted alligator embossed, silver finish, white metal ball top, nickel ferrule. Per dozen..... .90

N1557

N1561

N1553

No. N1557. Cane, maple stick, purple, maroon, etc., assorted, metal baseball head, enameled in purple and red, nickel ferrule. Per dozen..... .90

No. N1561. Cane, maple stick, finished in purple, maroon, etc., assorted with white metal booted lady's leg top, bent in angle, nickel ferrule. Per doz.. .90

No. N1553. Cane, maple stick, in assorted colors, fancy pressed design, white metal head, silver finish, nickel ferrule. Per dozen..... .90

N1623

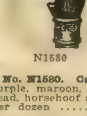
N1588

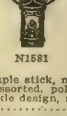
N1574

No. N1623. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, royal bronze color, highly finished horsehead top, nickel ferrule. Per dozen ..... .90

No. N1588. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, polished white metal, extra size, bent handle, booted lady leg design, nickel ferrule. Per dozen. ..... .95

No. N1574. Cane, maple stick, mahogany finish, in purple, maroon, etc, assorted, round head of polished white metal, fancy embossed floral design, nickel ferrule. Per dozen ..... .95


N1580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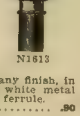
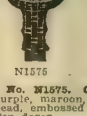

N1613

No. N1580. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, polished white metal head, horsehoof and ankle design, nickel ferrule. Per dozen ..... .90

No. N1581. Cane, maple stick, mahogany finish in assorted colors, nickel polished white metal head embossed in fancy floral design with heavy stem embossed to match; nickel ferrule. Per dozen ..... .90

No. N1613. Cane, heavy maple stick, mahogany finish, in purple, maroon, etc., assorted, with fancy embossed design metal head, brass polished, nickel ferrule. Per dozen ..... .90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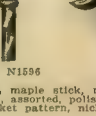
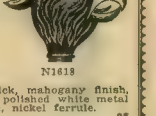

N1596


N1618

No. N1575. Cane, maple stick, mahogany finish, purple, maroon, etc., assorted, polished white metal head, embossed basket pattern, nickel ferrule. Per dozen ..... .95

No. N1596. Golf Cane, select maple sticks, enameled in oak grain, golf club shape head of white metal, nickel plated and polished, nickel ferrule. A cane that is popular. Per dozen..... .95

No. N1618. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted polished and nickeled, white, metal, large size, parrot head top, nickel ferrule. Per dozen.. 1.00

THE SHURE WINNER PRICE LIST

Big Leaders in Attractive Style Canes

One Dozen in Bundle—No Less Sold

N1620

No. N1620. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, polished and nickeled white metal, large size, chicken claw handle, holding a ball, nickel ferrule. Per dozen.... 1.00

N1633

No. N1633. Cane, heavy maple stick, mahogany finish, in maroon, purple, etc., assorted, 1½ in. white metal heads made in the shape of a dice set on one corner. Per dozen..... 1.00

N1630

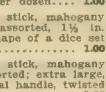
No. N1630. Cane, heavy maple stick, mahogany finish in purple, maroon, etc., assorted; extra large, gilt and silver finished, white metal handle, twisted design, nickel ferrule. Per dozen..... 1.05

N1619

No. N1619. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, silver finish white metal large size camel head, nickel ferrule.
Per dozen..... 1.10

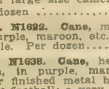
N1622

No. N1622. Cane, maple stick, mahogany finish, in purple, maroon, etc., assorted, gilt finish, highly ferrule. Per dozen..... 1.10



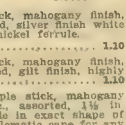
N1638

No. N1638. Cane, heavy maple stick, mahogany finish, in purple, maroon, etc., assorted, 1⅛ in. silver finished metal head made in exact shape of rugby football; a very fine emblematic cane for any rugby football team; nickel ferrule
Per dozen..... 1.10



N1628

No. N1628. Cane, extra heavy maple stick, mahogany finish, in purple, maroon, etc., assorted, gilt and silver, polished white metal, extra large horsehead bent handle, nickel ferrule. Per dozen..... 1.30



N1633

No. N1633. Cane, heavy maple stick, luster black finish, 2 in. white metal head, gilt and silver finish, top embossed with art portrait, nickel ferrule
Per dozen..... 1.20

N1635

No. N1635. Cane, select maple stick, luster finish in black, etc, large size top made of white metal, fancy design with fancy embossings, art figure in end, gilt and silver finish, nickel ferrule.
Per dozen..... 1.25

N1614

No. N1614. Cane, extra heavy maple stick in purple, maroon, etc., large size metal elephant head, finished gilt and silver, assorted. This is one of the most popular sellers. Per dozen..... 1.30

N1643

No. N1643. Cane, heavy maple stick, mahogany finish, black maroon, etc., white metal head, in gilt and silver finish, nice embossed patterns, very neat.
Per dozen..... 1.30

N1637

No. N1637. Cane, heavy maple stick, mahogany finish, in purple, maroon, etc., assorted, metal head, gilt and silver finished, raised, embossed in various figures, bugs, ears of grain, etc; nickel ferrule
Per dozen..... 1.35

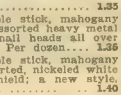
N1640

No. N1640. Cane, heavy maple stick, mahogany finish, in purple, maroon, etc., assorted heavy metal handle, embossed indian hobnail heads all over in raised effect, nickel ferrule. Per dozen.... 1.35

N1641

No. N1641. Cane, heavy maple stick, mahogany finish, purple, maroon, etc., assorted, nickeled white metal head, fancy embossed shield; a new style, nickeled ferrule. Per dozen..... 1.40

Wood Cane Rings



Wood Cane Rings, extra heavy weight, best ring ever made for this purpose; 50 of one size in package.

No. N1732. 1⅝ inches inside. Per 100..... 1.15

No. N1733. 1¾ inches inside. Per 100..... 1.15

No. N1731. "Half Dollar" size wood rings for knife racks, peg games, etc. 50 in package. Per 100..... 1.15

CANE RACKS

Our Cane Racks are made of Strong Twisted Fish Cord, bound with heavy canvas all around, with finished loops in each corner, supplied with brass eyelets, ready to set up.

No. N1680.	Size 4x5 feet.	Each.....	1.50
No. N1681.	Size 5x5 feet.	Each.....	1.75
No. N1682.	Size 6x6 feet.	Each.....	2.25
No. N1684.	Size 7x7 feet.	Each.....	2.70

CANE ASSORTMENTS

Cane assortment, good maple sticks, China heads, glazed finish, assorted colors. Three assorted designed heads to the dozen. One dozen in bundle
No. 16N62. Per dozen..... .60

Cane assortment, Maple sticks, China heads in blue and brown glaze finish. Assorted heads such as Monkey, Negro, Lion, Bull Dog, Ladies' heads, etc., to the dozen
No. 16N51. Per dozen..... .70

CANE ASSORTMENTS FROM THE FACTORY

We own and have operated for years our own cane factory. Others may give you the same number of canes at the same price, but have you compared the quality?

PRICES ON CANE ASSORTMENTS DO NOT INCLUDE NETS, CANE RACKS OR RINGS.

5.00 Cane Assortment

An excellent assortment, consists of 100 canes, in large variety of metal, wood and China heads, assorted colors and variety of sticks
No. 16N65. Per assortment..... 5.00

15.00 Cane Assortment

Favorite Cane Assortment. It contains a generous sprinkling of the better quality canes. In it you find a large variety of ball tops, fancy mottled, assorted colors, metal, wood and china heads. This assortment is very attractive and will insure a large crowd. Consists of 250 canes.
No. 16N97. Per assortment of 250 canes.... 15.00

10.00 Cane Assortment

This lot is an ideal selection of popular goods, a big variety of ball tops in assorted colors. Engraved metal, wood and china heads. Assortment consists of 175 canes. More high priced canes than in the $5.00 assortment.
No. 16N88. Per assortment of 175 canes..... 10.00

25.00 Cane Assortment

Our 25 Dollar Cane Assortment. This is the best representative assortment of canes ever shown. Consists of 400 canes in many styles finely polished maple and fancy mottled sticks. Variety of metal, wood and china heads. A high class assortment containing many of our highest priced canes.
No. 16N88. Per assortment of 400 canes..... 25.00

GENTLEMEN'S FINE WALKING CANES

Imported Wood Very Fine Cane, Handsome Grain, very highly polished crook handle cane carved to represent joints. Horn ferrule. Beautiful grayish brown with beautiful golden grain.
No. 16N73.
Per dozen 15.00 | Each 1.35

Gentleman's Walking Stick, made of fine grain hard wood. Fancy shape and steam bent crook handles. Steel ferrule. Natural or brown mahogany finish.

Natural Finish	Brown Mahogany Finish
No. 16N94.	**No. 16N93.**
Per doz. 8.50	Per doz 8.50

Very Fine Imported Cane. Beautiful gray grain shot through with flecks of gold. Very hard and heavy wood, resembling closely partridge wood. Wonderfully polished. A cane that will please the most fastidious.
No. 17N56.
Per dozen 15.00 | Each 1.35

THE CENTRAL FROG & SWITCH CO.

GEORGE ASHTON, President — CINCINNATI, OHIO — E. R. HEITZMAN, Secretary & Treasurer

—Manufacturers—

Frogs, Switches, Crossings, Crossovers, Switch Stands, Turnouts, and Special Track Work for Mines, Mills and Railroads

Products

We manufacture a general line of track equipment such as Frogs, Switches, Switch Stands, Crossovers, Crossings, Guard Rails, Guard Rail Clamps, Tipple Tracks, Incline Layouts, Room Turnouts, Tie Plates, Steel Ties, Portable and Industrial Track of every description.

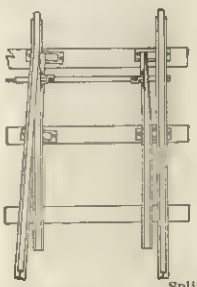
Specialty

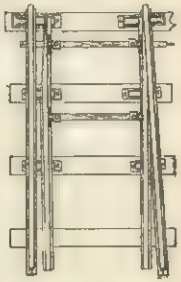
We make a specialty of light rail Track Equipment for MINES.

And maintain an expert engineering staff who will make a study of your special requirements.

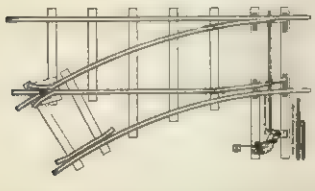
Let us solve your transportation problems.

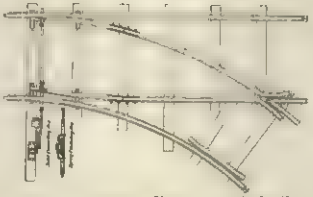
We will design your Layouts and make no charge for consulting engineering.



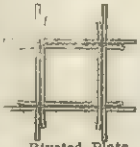


Split Switches.
Can be furnished curved or straight, various lengths.



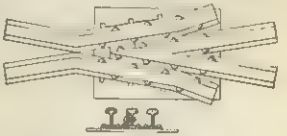


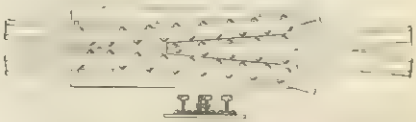
Curved Turnouts, with Frogs made long enough to connect direct to switch, thus eliminating short lead or filling rails.
This type of Turnout has been adopted as the standard Turnout in a number of the largest mines in the United States.



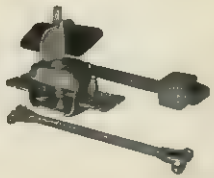
Riveted Plate Crossing

Pressed Steel Rail Brace





Riveted Plate Frogs. Any angle or length.



Rolled Steel Tie Plate

Switch Stands. Various Types.

Patented Steel Mine Tie

The "CINCINNATI" Frog & Switch Company

CHAS. PARTINGTON
Pres. & Gen'l Mgr.

A. J. ENDEBROCK
Sec'y & Treas.

C. H. PARTINGTON
Chief. Engineer

ESTABLISHED 1906

General Office and Works: CINCINNATI, OHIO

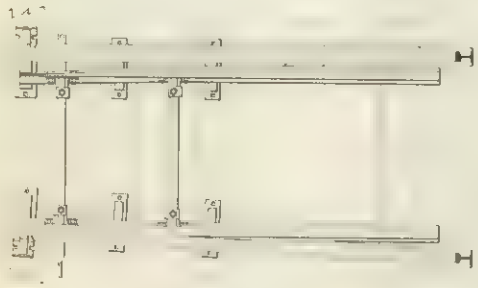
Track Work For All Purposes. Expert Engineering Work On Complete Haulage Systems For Coal Mines.

Our Experience of Specializing in MINE TRACKS Over a Period of 18 Years is Paralleled by None

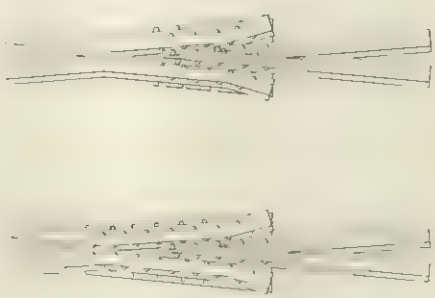
---

Products

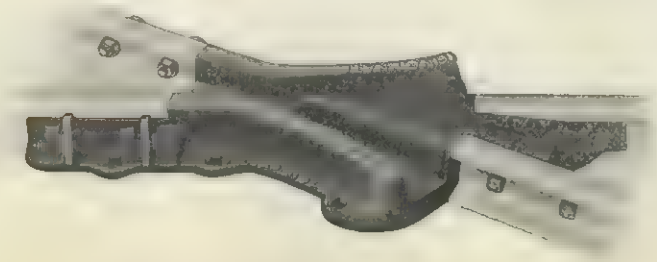
We do not limit our line to only Frogs, Switches and Switch Stands but are prepared to furnish Guard Rails, Guard Rail Clamps, Incline Tracks, Crossings, Crossovers, Room Turnouts, etc. Special Layouts to order. Rails from 12 lb. to 100 lb. No order too large or too small.



Split Switch



Riveted Frogs



"TROJAN" Cast Steel Frog Has No Superior

"CINCINNATI" Guard Rail Clamp.
Rails 20 lb. to 100 lb. per yard.

This clamp is made in two sizes of which No. 1 is for rails from 50 to 100 lbs. and No. 2 for 20 to 45 lb. rails. The adjustable feature is not used for the 20 and 25 lb. sizes, due to flangeway interference.

The yoke is a steel drop forging having a tensile strength of 92,000 pounds per square inch. The flangeway blocks and wedges are of the best material to match the strength of the yoke.

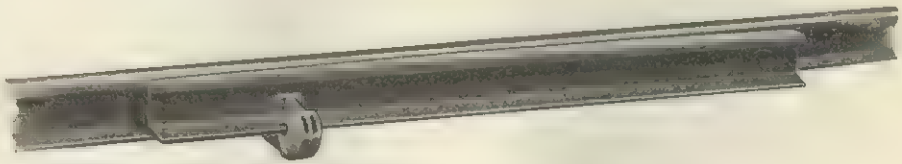
We recommend this clamp for real service.

"CHAMPION" Parallel Throw Stand.
Double Bearing.

The original Champion switch stand has been further developed to the above design to include a bearing at the lower end of the crank.

This stand throws parallel with the track, is non-automatic, holds switch points extremely tight due to toggle action and has an adjustable throw.

Workmanship is of the best, while material includes steel drop forgings, cold rolled steel, bar stock and malleable iron.



Extension Switch Point and Patented Clamp.

The extension switch point and patented clamp illustrated above is very useful and popular in room work.

The old method of spiking the switch point against the extension rail is eliminated as the patented clamp holds more securely and is quickly applied or removed by driving with any implement that may be at hand.

The clamp is made of high grade malleable iron and can be furnished with or without the switch points. Unless otherwise specified, we make the switch points three feet long.

Complete details covering the use of this extension idea will be sent on request.

Send For
CATALOG No. 5

This book illustrates and describes the most complete line of track work and accessories on the market. Useful data for the engineer and trackman is included.

This Registered Trade-Mark

Stenciled in bright orange on all
"CINCINNATI" Track Work
is your protection against imitations.

EGYPTIAN IRON WORKS

MURPHYSBORO, ILL.

Engineers, Founders, Machinists

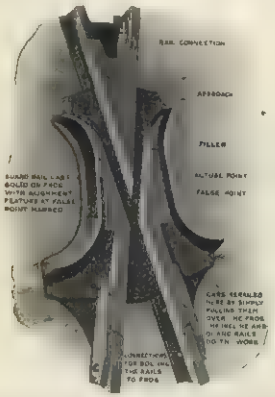
Manufacturers of Mining Equipment

Products

Mine Frogs and Switches; Plain and Hyatt Roller Bearing, Timken Bearing, Plain Hub and Cap Pattern Car Wheels; Mine Car Journal Boxes and Axles; Shaker Screen Outfits; Common Grates; Stoker Grates and Links of all kinds; Chilled and Steel Tired Mine Locomotive Wheels; Mine Locomotive Axles; Piston Heads and Piston Ring Castings; Grey Iron, Semi-Steel, Steel and Brass and Bronze Castings.

Reid Safety Frogs

The Reid Safety Frog has been designed with that in view of eliminating all complicated construction and preventing wear and tear on rolling stock and locomotives, as well as on the frog itself and also to better safety conditions around the mine and quarry.



A Dozen Reasons Why The Reid Safety Frog Gives Complete Satisfaction

1—It is correctly designed by practical men.

2—Cast in one solid piece.

3—No bolts, rivets or plates to become loose.

4—Guard rails are cast solid on frog, thereby saving the cost of extra guards.

5—Guard rail ends are rounded and beveled to prevent dragging beams and chains from catching.

6—The guard rails are so placed that they automatically align the wheel over the point.

7—The built up center of the Reid Frog premits the flange of the wheel to carry the weight of the car over the actual point of the frog, reducing to a minimum the wear and tear on equipment.

8—The Reid Frog can be used as a car replacer. The frog is tapered at each end and the guard rails guide the car wheels to the flange way of frog.

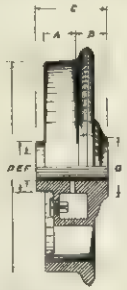
9—The Reid Frog is made of high grade semi-steel and in actual use has met the most exacting requirements of mine service.

10—The rail bolts direct to the frog as shown in the above illustration.

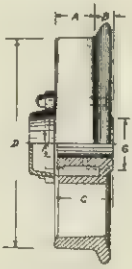
11—Made for standard rails of 12 lb. to 60 lb. per yard.

12—Carried in stock for prompt shipment.

Installing Reid Safety Frogs means money saved and transportation speeded up.



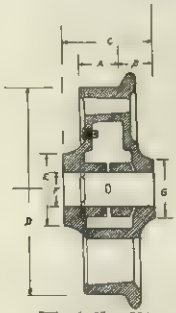
Wheel No. 100
Spring Oiler
Type



Wheel No. 104
Cap Pattern

Egyptian Chilled Tread Car Wheels

The quality of wheel castings is of vital importance. By the use of a special mixture of Charcoal Iron combined with the proper percentage of



Wheel No. 624
Auxiliary Oiling System
with Spring Oiler

steel we are able to produce a strong, tough, deeply chilled wheel. All wheels are thoroughly annealed, which insures the greatest strength and wearing qualities.

The durability and simplicity of the Egyptian Wheels eliminates frequent wheel removals to-

LANTERNS

RAILROAD

Dietz Improved Switchmen's. Adjustable insulated bail and outside wick raiser, bail can be locked in an upright position for signaling. Indispensable on electric traction railroads. Equipped with new patented Wing Lock burner which fits into a slip collar and rests on a fibre washer permanently secured to the fount. Fount automatically held to frame and is provided with a well which prevents the oil from sloshing.

X. L. C. R.—Height over all 9 inches, throws 2-candle power light, burns 24 hours; No. 2 size burner, 1-inch wick, Vulcan globe for Signal oil: wicked ready for burning. Per dozen..$36.60

One dozen in a case.

No. 1—Extra flat copper burners for above lanterns. Per dozen $2.50

No. 2—Rachet burners for above lanterns. Per dozen 3.00

Little Star.

Little Star—Dietz' square tubular; lift wire with guards, for kerosene, bright tin ⅔ size; No. 1 burner, ⅝-inch wick, U. S. globe. Weight, per dozen, 22 lbs. Per dozen.....$13.75

Half dozen in a case.

Monarch.

Monarch—Dietz', bright tin, round tubular, lift wire, with guards; for kerosene; No. 1 burner, ⅝-inch wick, No. 0 tubular globe; burns 17 hours. Weight, per dozen, 35 lbs. Per dozen $14.00

One dozen in a case.

Steel Clad.

Steel Clad (39)—Double guard, No. 2 ratchet burner, No. 39 globe, burns Signal oil. Wt., per dozen, 45 lbs. Per dozen $32.00

COLD BLAST

Dietz' Little Wizard is same general construction as the New Wizard, except is smaller and takes No. 1 burner and Little Wizard globes. Weight, per dozen, 35 lbs. Per dozen $17.50

Standard.

Standard (39)—Double guard, No. 2 ratchet burner, No. 39 globe burns Signal oil. Weight, per dozen, 42 lbs. Per dozen $31.00

LANTERNS
COLD BLAST

Dietz' D-Lite Cold Blast.

Small Fount. Large Fount.

This cold blast lantern is new in every detail combining a series of improvements that make every point of its construction a feature of merit. The globe is the easiest to clean, and is far better guarded than the old style. The flame does not strike the upper part of the globe, keeping it cooler and less liable to become smoked on a high flame. The chance for breakage is also reduced to a minimum. The burner is the safest and most reliable that has ever been produced and is locked in absolutely. The new lift is practically indestructible and more conveniently located. The new one-piece top adds to the beauty of the lantern and to its substantiability. The entire lantern is smaller, more compact and more convenient. It is made of best grade IX tin with a XXAA heavily coated tin plate bottom. It is but 13 inches high and will burn 24 hours with one filling. Fount is fitted with a large filler for convenience in filling. In lighting qualities it surpasses anything heretofore made in lanterns and throws the brightest, white light of all.

D-Lite Tin—Small Fount—Weight, per dozen, 50 lbs. Per dozen $21.60

D-Lite Tin—Large Fount— Weight, per dozen, 56 lbs. Per dozen 25.00

One-half dozen in a case.

The volume of light by test of this remarkable lantern is 10 c. p. Embodies every good technical lantern feature, viz.: reinforced tubes, globe lift inside of frame, dome-shaped solderless oil fount; large oil filler, Dietz' patent safety wing-lock coneless burner, security standing bail hooked into patented brass eyelets.

No. 2 Blizzard — Bright tin, 1-inch wick, No. 2 Blizzard coneless burner, Dietz Blizzard globe, fount capacity 18 hours, height over all 15 ins. Wt., per dozen, 50 lbs. Per dozen $21.60

No. 2 Blizzard Special—Bright tin, fount capacity 40 hours; otherwise same as above. Weight, per dozen, 54 pounds. Per dozen.....$23.75

All above, one-half dozen in a box.

Dietz' Blizzard Junior—No. 1 burner, ⅝-inch wick, Junior globe, burns kerosene. A light weight lantern for all-around use.

Bright Tin—Weight, per dozen, 30 lbs. Per dozen..$15.80

Brass—Weight, per dozen, 40 lbs. Per dozen....$27.00

Nickel Plated over Brass—Weight, per dozen, 40 lbs. Per dozen $34.50

All Blizzard Junior
One dozen in a case.

"SPORT" LANTERNS
(Formerly Scuot.)

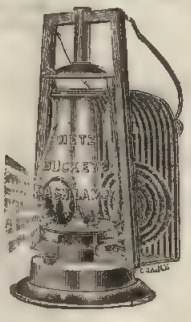
Dietz.

This is the smallest hand lantern ever offered to the public. Many lanterns of this size have been introduced, but most of them were ornaments or toys, whereas Dietz "Scout" is practical and will burn steadily in wind or storm. Its construction is good, and while light in weight, will prove serviceable.

Scout—Height 7¾ inches; size of wick ¾ inch; fount capacity 10 hours; bright tin finish; weight, per case, 10½ pounds. Per dozen $15.00

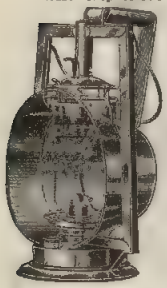
One dozen in a case.

Buckeye.



Buckeye—Dash lamp, for kerosene; blue Japanned finish; No. 1 burner, ⅝-inch wick, No. 0 globe; patent bull's eye; lens secured to plate. Burns 17 hours. Weight, per dozen, 54 pounds. Per dozen $21.60

Acme Inspectors'.

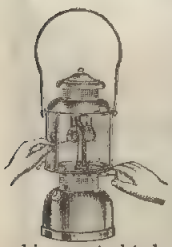


Dietz Acme—Inspectors' lantern, designed especially for car inspection. Safe to use around cars loaded with combustible material. Founts hold sufficient oil to burn 20 hours. Burns kerosene, ⅝-inch wick, hood 6 inches deep, 5-inch silvered glass reflector. Weight, per dozen, 60 lbs. Per dozen $38.50

All above, half dozen in a case.

GASOLINE

Quick-Lite.

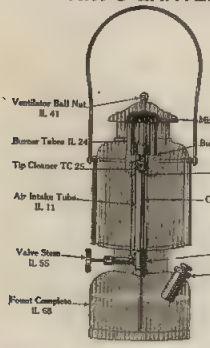


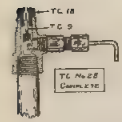
The Quick-Lites light with common matches. No alcohol or torch is needed. Every dealer who has ever used or sold a gasoline lamp will quickly recognize this big advantage. These lanterns are equipped with the Quick-Lite burners, otherwise they are the same as the Air-O-Lite.

No. LQ327 — Lights with a match through a door in the reflector, which forms a part of the chimney. It holds 2 pints, burns 15 hours on one filling, gives 300 candle power and is guaranteed to burn in any wind. One in a box complete with mantles, pump wrench, cleaning pick and extra generator. Shipping weight, 6 lbs. Each..$12.00

(Repairs for Quick-Lite on following page.)

REPAIR PARTS FOR MODEL "GS" AND "GSN" TORCH LIGHTNING AIR-O-LANTERN





All parts on the GS and GSN lanterns are interchangeable with the exception of the automatic tip cleaner and generator tube for the GSN lantern. Select parts for this device from the small cut at the right here.

No. GS323 is a popular lantern at a medium price. It has a simple torch lighting burner and is well made in every particular.

TC8	—Needle Shank Holder	$0.10
TC9	Needle Point Holder	.10
GS11	—Air Intake Tube	.50
GS17	—Burner Frame Washer	.10
GS18	—Gas Tip	.10
GSN18	—Gas Tip	.10
GS23	—Burner Cap Screens, 2 for	.10
GS23-25	—Burner Cap complete	.30
GS24	—Burner Tube	.20
GS26	—Mixing Chamber	1.60
GSTC26	—Tip Cleaner, complete	.80
GS27	—Burner Set Screw	.10
GS36	—Lead Gasket, 2 for	.10
GS40	—Ventilator Rod	.10
GS41	—Ventilator Ball Nut	.10
GS47	—Burner Frame Lock-Nut	.10
GS55-18	—Valve Stem and Nut	.40
GS57	—Valve complete	.90
GS58-59	—Filter Wick and Screen	.10
GS58-12	—Generator Wick and Tube (to use without tip cleaner)	.80
GSN58-12	—Generator Tube and wick (to use with automatic tip cleaner)	.80
GS64b	—Filler Plug complete	.80
GS65	—Fount complete	5.00
GS85	—Ventilator	2 40
GS89	—Chimney Support Rest	.60
GS98	—Frame complete	1.60
GS	—Generator, Valve and Tip assembled (to use without cleaner	8.00
GSN	—Generator, Valve and Automatic Tip Cleaner assembled	8.80
GS70	—Burner complete, assembled	3.00
GS	Lighting Torch	.20
GS	—Pump	1 00
GS	—Pump Leather	.10
GS	—Wrench	.30
GS	—Mica Chimney	1.20

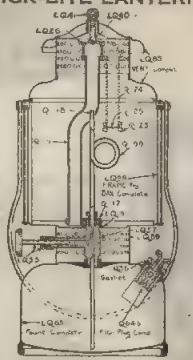
Mica Chimneys.
For Old Style Air-O-Lantern.

No. 319.

No. 319—Diameter, 6 inches; height, 4½ inches. Per dozen.....$12.00

No. LQ327 takes No. 327 Chimney complete.

REPAIR PARTS FOR MODEL "LQ" QUICK-LITE LANTERNS



Q11	—Burner Support Tube only	$0.60
Q17	—Burner Support Casting	.20
Q18	—Gas Tip	.10
LQ19	—Burner Frame Washer	.10
Q23	—Burner Cap complete	.30
Q24	—Burner Tube	.20
Q25	—Burner Cap Screens, 2 for	.10
LQ26	—Mixing Chamber	.80
Q36	—Lead Gasket, 2 for	.10
LQ40	—Ventilator Rod	.10
LQ41	—Ventilator Ball Nut	.10
LQ55	—Valve Stem and Nut	.40
LQ57	—Valve, complete	1.00
Q64b	—Filler Plug complete	.80
LQ65	—Fount complete	6.00
LQ70	—Burner, Generator and Valve assembled	3.50
LQ85	—Ventilator complete	2.40
LQ89	—Globe Base Rest	.60
LQ98	—Frame and Bail	1.60
Q99	—Generator	.50
LQ	—Metal Reflector	.40
LQ	—Mica only	.90
No. 327	—Chimney complete	1.30
Q	—Pump	1.00
Q	—Pump Leathers	.10
LQ	—Wrench	.30
Q	—Tip Wrench	.10
Q	—Tip Cleaning Needle	.10

FORD MOSSBERG WRENCHES

No. 630

Cylinder Head Screw and Rear Axle Housing Nut Wrench

Especially designed for **all** Cylinder Head Cap Screws (including those hard to get at under the dash) and Rear Axle Housing Bolts and Nuts.

Construction: ⅛ inch Heavy Steel Bar.

Length: 9-¾ inches.

Finish: Burnished nickel.

Fits:

½ inch opening

Coil box nuts.
Controller shaft bracket bolt and nut.
Crank case lower cover cap screws.
Dash bracket-to-dash bolt and nut.
Differential drive gear screw
Front and rear spring retaining clip bolt.
Horn bolts and nuts.
Muffler rod nut.
Rear axle housing bolts and nuts.
Running board bolts and nuts
Steering tubing flange screw and nut.
Tire holder bracket-to-body bolt and nut.

⅝ inch opening

Commutator case support bolt (starter type).
Connecting rod cap bolts and nuts (except No. 4).
Cylinder front cover cap screw (starter type)
Cylinder head cap screws.
Cylinder water inlet and outlet connecting screws.
Demountable rim lug nut.
Drive shaft roller bearing housing set screw (1920 and previous)
Drive shaft roller bearing stud and nut.
Time gear cover (starter type).

Packing: Twelve in a carton.

Shipping Weight: Twelve wrenches 8-¼ pounds.

Each $0.67

No. 638

Wrist Pin Wrench

A tool that **will** do the work it is designed to do quickly, efficiently and completely.

Opening:

9/16 inch

Fits:

Battery bracket-to-frame bolts and nuts.
Brake and reverse support bolts and nuts.
Cam shaft bearing set screws.
Carburetor nuts (Holley Model N. H.)
Clutch lever screw and nut.
Clutch release fork clamp screw.
Commutator case support bolt (1919 and previous).
Connecting rod clamp screws.
Crank case and cylinder cover cap screws.
Crank case arm bolts and nuts, (side and top).
Crank case bolts and nuts.
Cylinder cover bolts and nuts.
Cylinder front cover cap screws
Cylinder valve cover nuts.
Fan adjusting screw.
Front fender iron bolts and nuts (side and bottom).
Inlet and exhaust clamp stud and nut.
Magnet bolts.
Muffler head-to-frame bolts and nuts.
Radius rod ball cap stud and nut.
Steering post bracket bolts and nuts.
Transmission cover bolts.
Universal ball cap bolts.

Construction: ⅝ inch forged steel special heat treatment.

Length: 9-¼ inches.

Finish: Burnished nickel.

Packing: Six in a carton.

Shipping Weight: Six wrenches 9-¼ pounds.

Each $1.25

No. 635

Cylinder Head Screw and Spark Plug Wrench

A utility wrench with great scope of work. Is an established type and is a good leader for service stations and repair shops.

Openings: ⅝ inch hex, and 15/16 inch.

Fits:

⅝ inch hex. opening

Commutator case support bolt (starter type).
Connecting rod cap bolts and nuts (except No. 4).
Crank case front bearing screws.
Cylinder front cover cap screw (starter type).
Cylinder head cap screws
Cylinder water inlet and outlet connecting screws.
Demountable rim lug nut
Drive shaft roller bearing stud and nut.
Drive shaft roller bearing housing set screw (1920 and previous).
Time gear cover (starter type).

15/16 inch opening

Crank case drain cup plug.
Differential housing oil plug.
Front spring perch nut.
Drive shaft castle nut.
Rear hub lock nut.
Spark plug (Champion X).
Transmission band adjusting screw nut

Construction: Heavy special steel. Socket, special alloy, properly hardened.

Finish: Burnished nickel

Length: 10 inches.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 4⅝ pounds.

Each $0.85

No. 627

Carburetor Bolts and Generator Screws Double-end Wrench

Especially adapted for carburetor bolts and generator screws and fits 20 other adjustments on Ford cars

Openings: ⅝ and 9/16 inch hex.

Fits:

⅝ inch hex.

Especially adaptable:
Cylinder front cover cap screws.
Cylinder head cap screws.
Cylinder head outlet connecting screw
Drive shaft roller bearing screws.
With interfering parts removed.
Body bracket connecting bolt and nut

9/16 inch hex.

Especially adaptable:
Ball socket bolt and nut.
Carburetor flange bolt and nut.
Connecting rod cap bolt and nut.
Crank case cap screws.
Muffler head-to-frame bolt and nut.
Radius rod ball cap stud nut.
Rear spring tie bolt and nut.
Steering post bracket bolt and nut.
Steering yoke clamp bolt.
With interfering parts removed.
Brake and reverse support bolt and nut.
Cylinder valve cover screws.
Fan adjusting screw.
Magnet bolts.
Radiator stud nut.
Transmission cover bolts and nuts.
Universal ball cap bolts and nuts.

Construction: ⅛ inch steel bar.

Length: 10 inches.

Finish: Burnished nickel.

Packing: Six in a carton.

Shipping Weight: Six Wrenches, 4½ pounds.

Each $0.80

No. 652

Universal Joint Assembly Wrench

Actually saves one man's time on this difficult job. No more "fishing" but a quick, clean assembly.

Opening: 15/16 inch slot

Fits: Universal joint knuckle (male)

Construction: 5/32 inch heavy steel.

Finish: Burnished nickel.

Length: 8 inches.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 4 pounds.

Each $0.75

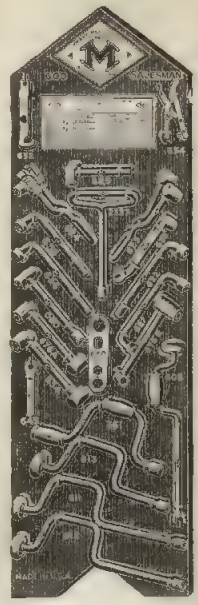
FORD MOSSBERG WRENCHES

No. 600 Salesman—Assortment Contains 80 Wrenches

This display board, though of no cost to you, will turn over more wrenches at less cost than other salesmen. No. 600 is on the job every minute.

It is well built and harmonizes with your salesroom fixtures.

The quantity of each wrench (22 different types) is determined by their relative sales call.



Board Description:

Construction: Cabinet work with three coats of finish. Second growth Chestnut.

Hooks: Each pair holds two wrenches Hooks are nickeled.

Finish: Natural grain.

Size: 20 inches wide by 66 inches high. Easel back.

Free with complete assortment.

Assortment Descriptions:

Construction: All bar items of heavy ½ inch steel. Crowfoot wrenches are forged from solid steel.

Finish: Burnished nickel.

Packing: Durable carton.

Shipping Weight: Board and Assortment, 120 pounds.

A small quantity of each of 22 wrenches that are in constant demand from FORD owners. Each wrench in the quantity that sales warrant. Sell this assortment as it is put up—you will save time of your customer and your salesmen Mossberg Company will stand back of the selection—that they will move quickly and that each one sold will sell two more.

No. 600 Salesman—80 Wrenches—22 Types

Wrench No	Quantity	Openings	Chief Use of the Particular Type
361	3	⅝	Demountable Rim Brace.
608	3	.....	Valve Grinder.
611	5	9/16	⅜ inch Cap Screw Wrench.
612	3	⅝	7/16 inch Cap Screw Wrench.
613	3	½	5/16 inch Cap Screw Wrench
622	3	9/16 sq.	Main Bearing Bolt Heads (crank shaft).
623	5	⅝	Fourth Connecting Rod.
624	2	⅝	Ratchet Connecting Rod Wrench.
625	5	9/16	All ⅜ inch nuts, bolts and screws.
627	5	⅝, 9/16	Carburetor Bolts and Generator Screws.
630	5	½, ⅝	Cylinder Head Screws and Axle Housing Nuts and Bolts.
634	3	15/16, 1	Spring Perch Nut Wrench.
635	4	⅝, 15/16	Cylinder Head Screws and Spark Plugs.
636	3	11/16	Fly Wheel Cap Screws.
638	2	9/16	Wrist Pin Wrench
645	6	Special	Reverse and Brake Pedal Tension Springs.
650	5	17/16, 1 ½, 1⅝, and 1⅛ oval	Hub Caps; Spindle Nuts; Front Cone; Hub Lock Nuts.
652	3	10/16 slot	Universal Joint
654	3	.....	Valve Spring Lifter.
676A	4	9/16, ¾	Transmssion Cover Bolts and Brake Shoe Support Nut.
676B	2	11/16, ⅞, 15/16	Spindle Connecting Rod Bolt Nuts, Spindle Arm Nut, and Rear Hub Lock Nut
2337	4	9/16	"Tee" Handle Socket Wrench.

Each $63.00

No. 625

3/8 inch Cap Screw Wrench

So many nuts, bolts and screws on a FORD car are of this size that this wrench is actually indispensable.

Opening: 9/16 inch hex.

Construction: ½ inch heavy steel bar. Socket of indestructible type.

Fits:

Ball and socket bolt and nut.
Battery bracket-to-frame bolts and nuts.
Brake and reverse support bolts and nuts.
Cam shaft bearing set screws.
Carburetor flange nut.
Carburetor nuts (Holley model N, H.).
Clutch lever screw and nut.
Clutch release fork clamp screw.
Commutator case support bolt (1919 and previous).
Crank case and cylinder cover cap screws.
Crank case arm bolts and nuts (side and top).
Crank case bolts and nuts.
Cylinder cover bolts and nuts.
Cylinder front cover cap screws.
Cylinder front cover cap screw (starter type).
Cylinder valve cover nuts.
Engine base bolts and nuts.
Fan adjusting screw.

Each $0.48

No. 632

Drive Shaft Castle Nut Wrench

Sometimes called the Differential Pinion Gear Castle Nut Wrench, is a tool designed just for the job and it will do the job indeed. Handle enters socket from the side, allowing short clearance.

Opening: 15/16 inch hex.

Fits:

Crank case drain cup plug.
Differential housing oil plug.
Drive shaft castle nut.
Front spring perch nut.
Rear hub lock nut.

Construction: ⅝ inch extra heavy steel bar. Socket, dome top with short clearance.

Finish: Burnished nickel.

Length: 10¾ inches.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 7¼ pounds.

Each $0.75

FORD MOSSBERG WRENCHES

No. 611

Special Speed Brace for FORDS
3/8 inch Cap Screw Wrench

"All-steel" speed braces with length, throw and clearance specially designed for work on Ford cars.

Opening: 9/16 inch hex

Fits:
- Ball and socket bolt and nut.
- Battery bracket-to-frame bolts and nuts.
- Cam shaft bearing set screws.
- Crank case bolts and nuts.
- Clutch lever screw and nut.
- Clutch release fork clamp screw.
- Cylinder front cover cap screw (starter type).
- Cylinder valve cover nuts.
- Engine base bolts and nuts.
- Fan adjusting screw.
- Front fender iron bolt and nut (side and bottom).
- Inlet and exhaust clamp stud and nut.
- Muffler head-to-frame bolts and nuts.
- Radiator stud and nut.

Construction: ¾ inch heavy Steel Bar. Socket of heavy wall, properly tapered for close work.
Length: 19¼ inches.
Finish: Burnished nickel.
Packing: 6 in a carton.
Shipping Weight: 6 wrenches, 11 pounds.

Each $0.80

No. 650

Hub Cap Wrench

The accepted design.
Construction: Heavy steel.
Length: 8½ inches.
Finish: Burnished nickel.
Packing: Twelve in a carton.
Shipping Weight: Twelve wrenches, 6 pounds.

Each $0.18

No. 612

Special Speed Brace for FORDS
7/16 inch Cap Screw Wrench

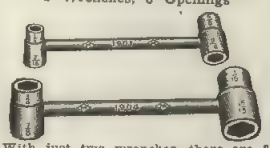
Work on Ford cars is today as nearly standardized as possible because wrenches and tools are standardized.
Opening: 5/8 inch hex.
Fits:
- Commutator case support bolt (starter type).
- Connecting rod cap bolts and nuts (except No. 4).
- Cylinder front cover cap screw (starter type).
- Cylinder head cap screws.
- Cylinder water inlet and outlet connecting screws.
- Demountable rim lug nut.
- Drive shaft roller bearing stud and nut.
- Drive shaft roller bearing housing set screw (1920 and previous).

Construction: ⅛ inch heavy Steel Bar. Socket of heavy walls, properly tapered for clearance.
Length: 19¼ inches.
Finish: Burnished nickel.
Packing: 6 in a carton.
Shipping Weight: 6 wrenches, 11¼ pounds.

Each $0.80

No. 1944

"Double-Four" Socket Set
2 Wrenches, 8 Openings



With just two wrenches, there are 8 socket openings and 77 possible adjustments on FORD cars that are reached by these two wrenches. Some adjustments on FORD cars are better made with the specially designed wrench which Mossberg has made for every individual place but —No. 1944 will cover most necessary demands, especially of owner drivers.

Construction and Length:
No. 1901—⅞ inch special analysis steel bar, 9½ inches long .....Each, $1.00
No. 1904—$1\frac{5}{16}$ inch special analysis steel bar, 11 inches long .....Each, 1.67
Finish: Burnished nickel.
Packing: Each set in durable cardboard carton.
Shipping Weight: 3¼ pounds.
No. 1944.....Per Set, $2.60

No. 613

Special Speed Brace for FORDS
5/16 inch Cap Screw Wrench

Opening: 1/2 inch hex.
Fits:
- Coil box nuts.
- Controller shaft bracket bolt and nut.
- Crank case lower cover cap screws.
- Dash bracket-to-dash bolt and nut.
- Differential drive gear screw.
- Front and rear spring retaining clip bolt.
- Horn bolts and nuts.
- Muffler rod nut.
- Rear axle housing bolts and nuts.
- Running board bolts and nuts.
- Steering tubing flange screw and nut.
- Tire holder bracket-to-body bolt and nut.

Construction: ½ inch heavy Steel Bar Sockets of heavy wall, properly tapered for clearance
Length: 14¼ inches.
Finish: Burnished nickel.
Packing: 6 in a carton.
Shipping Weight: 6 wrenches, 9¾ pounds.

Each $0.75

No. 636

Fly Wheel Cap Screw Wrench

The hardest adjustments to be made on a Ford car come in the Fly Wheel Cap Screws. This heavy forged wrench is guaranteed to meet the unusual demand necessary to do the work right.
Opening: 11/16 inch.
Fits:
- Fly wheel cap screws.
- Battery cable terminal nut on floor board.
- Battery clamp bolt nut.
- Body bracket connecting bolts and nuts.
- Hub flange bolt nuts.

Construction: ⅝ inch forged steel with heat treatment to assure maximum strength.
Length: 11¼ inches.
Finish: Burnished nickel.
Packing: Six in carton.
Shipping Weight: Six wrenches, 10½ pounds.

Each $1.25

FORD MOSSBERG WRENCHES

No. 623
Connecting Rod Wrench

Opening: 5/8 inch hex.
Fits the **fourth** connecting rod bolts and units without dismounting the motor, and

Fits:
Body bracket connecting bolt.
Commutator case support bolt (starter model).
Connecting rod cap screws (all).
Crank case front bearing screw.
Cylinder front cover screw.
Cylinder head screws.
Cylinder inlet and outlet connecting screws.
Demountable rim lug nut.
Drive shaft roller bearing housing set screw (1920 and previous).
Drive shaft roller bearing stud and nut.
Timing gear cover.

Construction: ⅛ inch heavy steel. Socket of special analysis.

Finish: Burnished nickel.

Length: 10¼ inches.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 5¼ pounds.

Each $0.53

No. 624
Connecting Rod Wrench

The most useful all-around wrench for Ford cars. Special chrome steel alloy socket.

Fits:
Body bracket connecting bolt.
Commutator case support bolt (starter model).
Connecting rod cap screws (all).
Crank case front bearing screw.
Cylinder front cover screw.
Cylinder inlet and outlet connecting screws.
Cylinder head screws.
Demountable rim lug nut.
Drive shaft roller bearing housing set screw (1920 and previous).
Drive shaft roller bearing stud and nut.
Timing gear cover.

Construction: ⅛ inch Steel Bar. Ratchet parts properly hardened. Socket of chrome steel alloy.

Finish: Burnished nickel.

Length: 10¼ inches.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 7¼ pounds.

Each $2.50

No. 676A
Double End Utility Wrench

The two sizes of sockets on this wrench show the largest number of adjustments possible of any wrench combinations. Reason enough for its turnover.

Openings: 9/16 and 3/4 inch hex.

Fits:

9/16 inch hex.

Ball and socket bolt and nut.
Battery bracket-to-frame bolts and nuts.
Brake and reverse support bolts and nuts.
Cam shaft bearing set screws.
Carburetor flange bolt nut.
Carburetor nuts (Holley model, N H).
Clutch lever screw and nut.
Commutator case support bolt (1919 and previous).
Crank case and cylinder cover cap screws.
Crank case arm bolts and nuts (side and bottom).
Crank case bolts and nuts.
Cylinder cover bolts and nuts.
Cylinder front cover cap screws.
Cylinder front cover cap screw (starter type).
Cylinder valve cover nuts.
Engine base bolts and nuts.
Fan adjusting screw.
Front fender iron bolts and nuts (side and bottom).
Inlet and exhaust clamp stud and nut.
Magnet bolts.
Muffler head-to-frame bolts and nuts.
Radiator stud and nut.
Steering post bracket bolts and nuts.
Steering yoke clamp bolt and nut.
Transmission cover bolts.
Universal ball cap bolts.

3/4 inch hex.

Brake shoe support nut.
Crank shaft bearing nuts (front and rear).
Fan bracket bolt.
Front spring clip bolt (1920 and previous).
Lamp bracket nuts.
Radius rod bolt and nut.
Spindle bolt nut.
Steering gear post castle nut.

Construction: 1/2 inch heavy Steel Bar. Sockets round for clearance.

Length: 9⅜ inches.

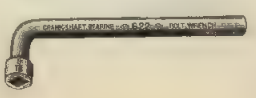
Finish: Burnished nickel.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 7½ pounds.

Each $0.75

No. 622
Main Bearing Bolt Wrench



Made for one particular job and made of one single piece of heavy forged steel to do that job—the adjustments of main bearing bolts.

Opening: 9/16 inch square.

Fits: Crank shaft bearing bolts.

Construction: ⅝ inch heavy forged steel.

Finish: Burnished nickel.

Length: 10¼ inches.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 9 pounds.

Each $0.90

No. 676B
Triple End Utility Wrench

A most useful wrench for some very difficult adjustments and is a supplementary tool in larger sizes for unusual work.

Openings: 11/16, 7/8, 15/16 inches hex.

Fits:

11/16 inch hex.

Battery cable terminal nut on floor board.
Battery clamp bolt nut.
Body bracket connecting bolts and nuts.
Brake shoe support bolt.
Fender eye bolt nut.
Front and rear spring hanger nut.
Hub flange bolt nuts.
Spindle body bolt with oiler.
Spindle connecting rod bolt nuts.
Spindle connecting rod bolt with oiler.

7/8 inch hex.

Front spring clip nut (1921).
Rear spring clip nut.
Spindle arm nut.

15/16 inch hex.

Crank case drain cup plug.
Differential housing oil plug.
Drive shaft castle nut.
Front spring perch nut.
Rear hub lock nut.
Spark plug (Champion X).

Construction: ⅝ inch heavy Steel Bar.

Sockets: Specially drawn.

Length: 10¾ inches.

Finish: Burnished nickel.

Packing: Six in a carton.

Shipping Weight: Six wrenches, 9½ pounds.

Each $1.20

JUSTRITE MANUFACTURING CO.

CHICAGO, ILL.

Manufacturers of

Justrite Carbide Mine Lamps

for

Miners, Superintendents, Engineers, Drivers, Pit-Bosses, Etc.

Products

Miners' Lamps—all types—in brass, steel and aluminum.

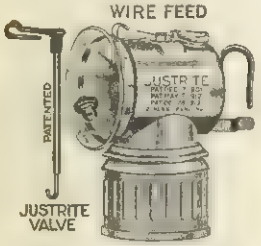
Miners' Caps—Carbide Flasks—Burner Tips—and all necessary supply parts.

Underwriters Approved Safety and Oily Waste Cans.

The models illustrated on this page are the most desirable for coal miners, and are known as "Coal Mine Lamps."

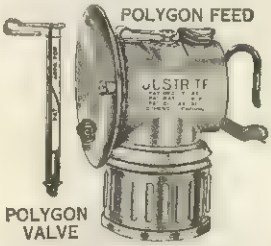
All lamps are equipped with self-lighter attachment. "Justrite" Lamps are constructed on scientific principles—only the very best material and workmanship being used. Every lamp is guaranteed.

If interested in other models, consult our general catalog No. 4—Mailed on request.



2¼" Concaved Reflector.
No. 407 Lamp...Polished Brass

3" Saucer Shape Reflector.
No. 467 Lamp...Polished Brass



2¼" Concaved Reflector.
No. 707 Lamp...Polished Brass

2⅝" Concaved Reflector.
No. 727 Lamp...Polished Brass

3" Saucer Shape Reflector.
No. 767 Lamp...Polished Brass

Specifications

Material	Brass
Finish	Brass or Nickel Plated
Reflectors	2¼" to 3"
Burning Capacity	2½ Hours
Weight	5 ounces
Charge	2 Ounces Carbide
Height	3¾"
Diameter Bottom	2"
Candle Power	16.7

Packed

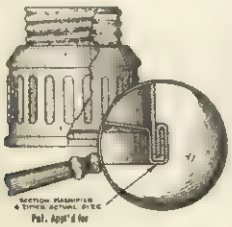
1 Doz. in Carton	6 Lbs.
6 Doz. in Container	33 Lbs.

The New Sparker Attachment

Used only on Lamps Nos. 927-929-967-969. Write for complete catalog No. 4.

The Strongest Lamp Bottom Made

All Justrite Lamps are equipped with this bottom.



No. 965.....Bottom Brass
No. 935.....Bottom Nickel

"Victor" Carbide Lamp

Miners preferring a "Vertical Shape" miners' lamp with detachable reflector will find that the Victor Lamp will give them the best results. The Victor Lamp is very rigid and strongly constructed, all weak points reinforced and strengthened.

No. 661 Lamp, Brass, 2⅝" Reflector.
No. 663 Lamp, Nickel Plated, 2⅝" Reflector.

World's Largest Manufacturers of Carbide Lamps

NATIONAL LAMP WORKS

OF GENERAL ELECTRIC COMPANY

Nela Park Cleveland, O.

National MAZDA Lamps

INCREASE PRODUCTION—DECREASE ACCIDENTS

Increased production, reduced accidents and eyesight preservation are bound to result if the lighting conditions of your mine are improved.

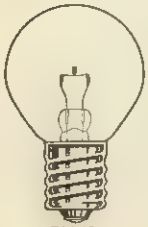
The ease and rapidity with which miners work is largely dependent upon how well they can see what they are doing. Electric cap lamps, with overhead lighting wherever possible and practical, will speed production and at the same time decrease accidents.

55% of the fatalities in mines, from gas or coal dust explosions, over a recent period of five years, were directly due to the use of the open flame or unsafe lamps.

Approved electric cap outfits should be carried by each miner and 100-watt MAZDA C lamps in angle type metal reflectors are recommended to light passages, crossings and switch junctions. In the shafts of buildings use 200 to 500-watt lamps with dome metal reflectors.

National MAZDA Lamps for electric cap outfits are designed to meet the rigid demands of the Bureau of Mines—with which our Engineering Department co-operates—and are always the last word in incandescent lamps.

Write for our Bulletin 38, "Portable Electric Mine Lamp Outfits" and feel free to ask our illumination engineers about any lighting problems you may have. National Lamp Works of General Electric Co., Nela Park, Cleveland, Ohio.



BM-18

NATIONAL MAZDA LAMPS FOR APPROVED ELECTRIC CAP OUTFITS

Outfit	Approved Symbol	Volts	Amperes	Bulb	Base	Unit Pkg. Qty.
Edison (old)	BM-10	2.80	0.37	G-5	1829	100
Wico	BM-14	1.90	0.65	G-8	1001 D. C. Bay	100
Wheat	BM-17	4.00	0.50	G-5	1841	100
Edison (new)	BM-18	2.50	1.10	G-8	Candelabra Screw	100

BM-17

GEM MANUFACTURING COMPANY

1229-1243 Goebel Street

PITTSBURGH, PA.

Manufacturers of

J. & T. Miners' Carbide Lamps

Products

Miners' Carbide Lamps.
Miners' Cadgers.
Oilers—Squirt and Pour.
Tallow Pots.
Grease Buckets.
Kerosene Torches.

The introduction of the carbide lamp into the coal mining industry was one of the greatest aids toward safety and stimulating a greater production per man. While it was a great improvement over the lamps using various kinds of oil, yet the fact that the burner was always clogging up caused them to be held in poor esteem by many miners. Unless he had a wire or reamer of some sort with him the lamp was useless. Even when he carried a bundle of reamers with him, these were often misplaced and caused him inconvenience, and he was as badly off as though he had none. As a result of having no light part of the time, his production and, therefore, his earnings fell off, due to the inefficiency of his light.

Cut Showing How J. & T. Cleaners Are Installed in Gem Lamps

The J & T Tip Cleaner—What It Is

Until the invention of the J & T Tip Cleaner, the efficiency of the ordinary carbide lamp was away below par. With the introduction of our lamps, equipped with this cleaner, the miner has a 100% efficient lamp to aid him in getting out maximum production with minimum trouble so far as light is concerned.

J & T Wire Cleaner

It consists of a wire, of a special composition, which will not break or corrode. This wire extends from a push button, located on the top of the lamp, through a brass tube and into the gas chamber. Its length is such that it does not interfere with free passage of the gas through the lava tip. (See illustration). This is accomplished by means of a spring located within a small pocket in the top of the lamp.

Operation

The burner tip having become clogged, the miner merely reaches up and presses the small push button which projects out of the top of the lamp. The wire, being slightly smaller than the gas orifice in the tip, is forced into the orifice and pushes out whatever foreign matter may have collected in the orifice. And this is accomplished **without extinguishing the light or without removing the lamp from the head.** As the operation requires but a few seconds the miner is able to keep production up to a maximum.

Improvements

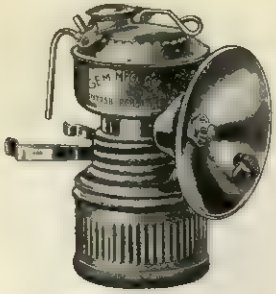
For instance, the reflector is screwed on with a brace, being held in place by a nut. Thus a lamp does not have to be scrapped just because the reflector is damaged. In fact all parts are easily replaceable and all are guaranteed against defects in workmanship and materials.

Each lamp is thoroughly tested before leaving our factory, so that only perfect lamps are shipped.

The lamp illustrating the J & T Tip Cleaner on this page is one-half the size of the actual lamp and can be furnished either in nickel or brass with round or flat hook.

We also make an Inspectors' Lamp with a larger carbide container, as illustrated on the opposite page, which is also equipped with the patent cleaning device.

Write us for any further information required, or better still, order an assorted dozen, showing the different size reflectors and finishes.



Round or Flat Hooks

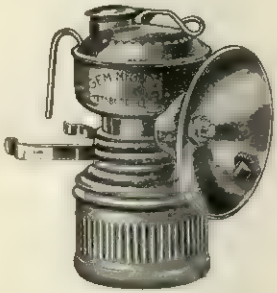
With Cleaner

Polished Brass

No. 960—2¼ in. Reflector
No. 870—2½ in. Reflector
No. 980—3 in. Reflector

Polished Nickel

No. 1060—2¼ in. Reflector
No. 1170—2½ in. Reflector
No. 1190—3 in. Reflector



Round or Flat Hooks

Without Cleaner

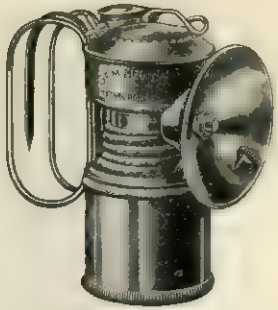
GEM LAMPS **without J. & T. Cleaners** are of the same general construction and have the same guarantee as our tip cleaner lamps.

Polished Brass

No. 96—2¼ in. Reflector
No. 87—2½ in. Reflector
No. 98—3 in. Reflector

Polished Nickel

No. 106—2¼ in. Reflector
No. 117—2½ in. Reflector
No. 119—3 in. Reflector



Polished Nickel
With Cleaner
Large Carbide Bottom

No. 300—3 in. Reflector

The ideal lamp for Inspectors, Superintendents, Mine Foremen, Campers, Hunters and for all outside work.

Reflectors

Are furnished in either brass or nickel and in sizes of 2", 2½" and 3". They are screwed on with a brace and held in place by a nut. Replacement is thus made easy and a lamp does not have to be thrown away just because the reflector is damaged.

Repair Parts for Lamps

Gaskets.
Felts.
Felt Holders.
Lava Tips.
Brass tips, Lava insert.
Brass and Nickel Bottoms.
Sparkers Complete.
Flints (one in capsule).
Springs for sparker.
Caps for sparker.
Nuts for sparker.
J. & T. Cleaning Wires.
Springs for J. & T. Cleaners.
Washers for J. & T. Cleaners.
Caps for J. & T. Cleaners.
Tip Reamers.

The Gem Repair Kits contain the following:

No. 1 Kit

3 dz. Gaskets.	2 dz. J. & T. Wires.
2 dz. Felts.	1 dz. J. & T. Springs.
3 dz. Brass Tips.	1 dz. J. & T. Caps.
6 dz. Flints.	1 dz. Reamers.
½ dz. Sparkers.	

No. 2 Kit

2 dz. Gaskets.	1 dz. Sparker Springs.
2 dz. Felts.	1 dz. Sparker Caps.
2 dz. Brass Tips.	1 dz. Sparker Nuts.
3 dz. Flints.	1 dz. Reamers.
¼ dz. Sparkers Complete.	½ dz. Felt Holders.

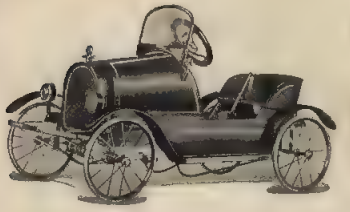
America's Foremost **Gendron-Pioneer Line** of Automobiles

"Sets the Pace" on Childrens Vehicles

These are positively the highest grade on the market. These are miniature duplicates of the higher grade larger Automobiles, patterned and so minutely designed, so thoroughly equipped, they merit the consideration of every man that wants the best. Don't forget they will give the utmost of service, pleasure and satisfaction and with reasonable good care should last a lifetime.

PBD means Plain Bearing Disc Wheels.

RBD means Retained Roller Bearing Disc Wheels.



Illustrating No. 4L63 Automobile

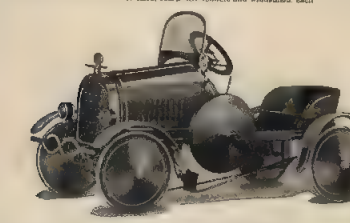
A very high grade type in the 12-inch diameter wheels Expertly constructed of select materials, unsurpassed finish, and especially pleasing It will prove beneficial to the development and health of your child Note specifications and equipment

Body—Size of chassis, 18x48½ inches. Wheel base, 36 inches. Finish—Body, hood and front, red Fenders black Striped and decorated in black and yellow. Equipment—Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer oil gauge, ammeter and ignition switch Motometer Horn Drum metal road lamps Gear shift lever Fenders beaded edge. Windshield License tags. Wheels, 12-inch, with 2½ inch rubber tire, plain bearing wire, red, with nickel plated hub caps. Weight—80 pounds. Packed K.D.—One in a crate.

No. 4L63 Automobile as described above each **$32.00**

No. 4L63PBD 12-inch with 2½-inch rubber tire plain bearing disc wheels, red with nickel plated Hub caps, each **35.00**

No. 4L60 Same auto as No. 4L63, except less fenders and windshield each . **22.55**



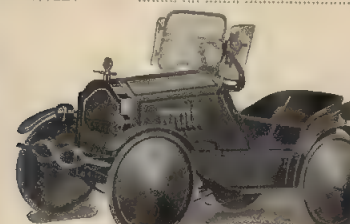
Illustrating No. 4L60PBD Automobile

Specifications and Equipment:

Body—Size of chassis, 12x43 inches. Wheel base, 36 inches. Finish—Body and hood Elk purple; front, maroon. Striped and decorated in garnish Fenders, red Radiator—Shell radiator, full nickel plated with black wire mesh screen protecting radiator core Equipment—Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer oil gauge, ammeter, and ignition switch. DeLuxe motometer Horn Drum metal road lamps Gear shift lever Ventilating louvers in sides of hood. Slip cover over spare wheel. Individual fenders Windshield Spotlight. Black figure eight bumper. License tags Wheels, 12-inch with 2½-inch rubber tire; plain bearing disc, red, with nickel plated hub caps. Weight—74 pounds. Packed K.D.—One in a crate.

No. 4L60PBD Automobile as described above, each **$44.00**

No. 4L60RBD 12-inch with ½ inch rubber tire, roller bearing disc wheels, red with nickel plated hub caps, each **47.00**

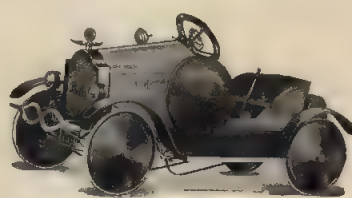


Illustrating No. 4L73RBD Automobile

One of the very highest grade numbers on the market. You will be surprised relative to the expert construction, completeness and attractive equipment, beauty of line and rich appearance. Specifications and equipment:

Body—Size of chassis, 14 x42 inches. Wheel base, 33 inches. Finish—Body and hood, light blue; front, maroon. Striped and decorated in yellow and black. Fenders red Equipment—Malleable ball bearing rear axle brackets. Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer, oil gauge, ammeter and ignition switch. DeLuxe motometer Horn Drum metal road lamps Gear shift lever Ventilating louvers in sides of hood Slip cover over spare wheel. Individual fenders Nickel plated windshield with mohair nap and flex wings. Spotlight Black figure eight bumper Step and step Universal License tags Wheels, 14-inch with 2½ inch rubber tire roller bearing disc, red with nickel plated hub caps Weight—90 pounds. Packed K.D.—One in a crate.

No. 4L73RBD Automobile as described above each. **$60.00**



Illustrating No. 4L64PBD Automobile

Specifications and Equipment:

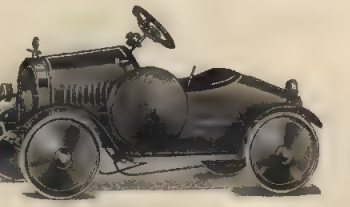
Body—Size of chassis, 14x44 inches. Wheel base, 35 x inches. Finish—Body, hood and front Napier green. Back Napier yellow. Striped and decorated in Portland rubber and black. Fenders black Equipment—Malleable ball bearing rear axle brackets. Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer oil gauge, ammeter and ignition switch DeLuxe motometer Horn Drum metal road lamps Gear shift lever Fenders beaded edge. Windshield nickel plated with mohair nap and flex wings. Spotlight Ventilating louvers in sides of hood Slip cover over spare wheel. Black figure eight bumper. Ventilating louvers in sides of hood License tags Wheels, 12 inch with 2½ inch rubber tire, plain bearing disc wheels, red with nickel plated hub caps. Weight—74 pounds. Packed K.D.—One in a crate.

No. 4L54PBD Automobile as described above, each **$39.95**

No. 4L64 14-inch with 2½-inch rubber tire, plain bearing wire wheels, red, with nickel plated hub caps, each **34.30**

No. 4L64RBD 12-inch with ½-inch rubber tire, roller bearing disc wheels, red with nickel plated hub caps, each. **42.00**

HIGH SPEED GEAR: The above model can be furnished with HIGH SPEED Adjustable Chain and Sprocket Drive with Ball Bearings in rear axle at an extra cost of $7.45 List. This gives it really racing speed without effort.



Illustrating No. 4L66RBD Automobile

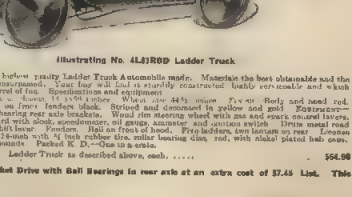
Specifications and Equipment:

Body—Size of chassis, 15x44½ inches. Wheel base, 34½ inches. Finish—Body hood and front, red Fenders black. Stripes and decorated in black and yellow. Equipment—Malleable ball bearing rear axle brackets. Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer oil gauge, ammeter and ignition switch DeLuxe motometer Horn Drum metal road lamps Gear shift lever Ventilating louvers in sides of hood Slip cover over spare wheel. Fenders Seat and rear upholstered Lenses tags Black figure eight bumper Step and step carrier. Wheels 12 inch with 2½ inch rubber tire, roller bearing disc red with nickel plated hub caps. Weight—84 pounds. Packed K.D.—One in a crate.

No. 4L66RBD Automobile as described above, each **$48.30**

No. 4L66PBD 12 inch with 2½ inch rubber tire, plain bearing disc wheels, red, with nickel plated hub caps, each. **45.20**

HIGH GRADE SPEED: The above model can be furnished with HIGH SPEED Adjustable Chain and Sprocket Drive with Ball Bearings in rear axle at an extra cost of $7.45 List. This gives it really racing speed without effort.



Illustrating No. 4L81RBD Ladder Truck

This is the highest quality Ladder Truck Automobile made. Materials the best obtainable and the workmanship unsurpassed. Used by us will find it sturdily constructed, looks very stylish and which will afford a barrel of fun. Specifications and equipment

Body—Size of chassis, 14 x36½ inches. Wheel base 44½ inches. Finish—Body and hood red, radiator dasher on front fenders black. Striped and decorated in yellow and gold Equipment—Malleable ball bearing rear axle brackets. Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer, oil gauge, ammeter and ignition switch Drum metal road lamps. Gear shift lever Fenders. Rail on front of hood. Step ladders, two lantern on rear Lenses tags. Wheels, 14-inch with ¾ inch rubber tire, roller bearing disc, red, with nickel plated hub caps. Weight—200 pounds Packed K. D.—One in a crate.

No. 4L81RBD Ladder Truck as described above, each. **$64.90**

HIGH GRADE SPEED: These two models can be furnished with HIGH SPEED Adjustable Chain and Sprocket Drive with Ball Bearings in rear axle at an extra cost of $7.45 List. This gives it really racing speed without effort.

America's Foremost

Gendron-Pioneer Line of Automobiles

Sets the Pace on Childrens Vehicles

Made Stronger and Better than Necessary. Priced very low in this selling. Make the heart and mind of your boy glad by giving him an Automobile. A vehicle that increases his vigor and health. Will harden him for the long wintry season indoors.

Illustrating No. 4L54 Automobile

As an automobile means as much to the child as it does to the parent. Watch one both enjoy them selves during hours of leisure. To the child it is of greater significance—it actually increases his strength and vigor. Note specifications and equipment

Body—Size of chassis, 12x34 inches. Wheel base, 28 inches. Finish—Body hood and front rail Stripped and decorated in yellow and black. Fenders, black. Equipment—Cast steering wheel with gas control lever. Motometer. Fenders. Windshield. License tags. Wheels, 10-inch with ½-inch rubber tire, plain bearing wire red with nickel plated hub caps. Weight—31 pounds. Packed K. D. One in a crate.

No. 4L54 Automobile as described above, each,. **$25.65**

No. 4L54PBD 10-inch with ½-inch rubber tire, plain bearing disc wheels, red, with nickel plated hub caps each **26.10**

Illustrating No. 4L55PBD Automobile

This is the type that will win the admiration of the boy. A racing type and enameled with a brake. Because brake is many it attracts attention. Being noticed the boy becomes conspicuous and feels important which every red blooded boy likes. Note specifications and equipment

Body—Size of chassis, 12x34 inches. Wheel base, 28 inches. Finish—Body, hood and front, light blue. Striped and decorated in red and yellow. Fenders red. Equipment—Cast steering wheel with gas control lever. Instrument board with clock speedometer, oil gauge, ammeter and ignition switch. Motometer. Horn. Metal lamps. Gear shift lever. License tags. Individual fenders. Wheels, 12-inch with ½-inch rubber tire, plain bearing disc red with nickel plated hub caps. Weight—48 pounds. Packed K. D.—One in a crate.

No. 4L55PBD Automobile as described above, each. **$28.85**

No. 4L55 10-inch with ½-inch rubber tire, plain bearing wire wheels, red, with nickel plated hub caps, each. **23.45**

No. 4L55PBD Same auto as No. 4L55PBD, except less individual fenders, each. **21.35**

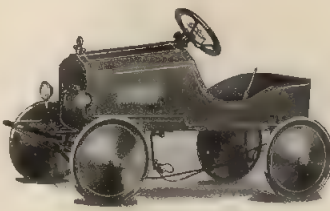
Illustrating No. 4L56PBD Automobile

The line of automobiles are not a makeshift. They exist as I competitive makes as materials are the best workmanship unsurpassed and equipment exhaustive and complete. In each and every model the purchaser is assured of receiving intrinsic value beyond expectations. Note specifications and equipment

Body—Size of chassis, 12x38 inches. Wheel base, 36½ inches. Finish—Body hood and front, red. Stripped and decorated in yellow and black. Tank, red. Equipment—Cast steering wheel with gas control lever. Instrument board with clock, speedometer, ammeter and ignition switch. Motometer. Horn. Metal lamps. Gear shift lever. License tags. Wheels, 12-inch with ½-inch rubber tire, plain bearing disc red with nickel plated hub caps. Weight—54 pounds. Packed K. D.—One in a crate.

No. 4L56PBD Automobile as described above, each **$26.65**

No. 4L56 10-inch with ½-inch rubber tire, plain bearing wire wheels, red, with nickel plated hub caps, each **24.20**



Illustrating No. 4L61PBD Automobile

Our line of automobiles are complete in every respect. A style to suit every purse. Anticipate your outlay and then make selection therefrom. You are assured that you will receive superior value for the money expended. Note how far any purse will permit. Note specifications and equipment

Body—Size of chassis, 12x37 inches. Wheel base, 30½ inches. Finish—Body hood and front, green. Stripped and decorated in red and yellow. Equipment—Cast steering wheel with gas and spark control levers. Instrument board with clock, speedometer, oil gauge, ammeter and ignition switch. Motometer. Horn. Metal lamps. Gear shift lever. License tags. Wheels, 12-inch with ½-inch rubber tire, plain bearing disc red with nickel plated hub caps. Weight—54 pounds. Packed K. D.—One in a crate.

No. 4L61PBD Automobile as described above, each **$27.80**

No. 4L61 10-inch with ½-inch rubber tire, plain bearing wire wheels, red with nickel plated hub caps each **24.00**

Illustrating No. 4L58 Fire Chief Automobile

Remember when we were boys how we played Fire? Now the chief had to supervise the task? We pulled our make-believe engine to the scene of the fire and followed instructions from the chief. Nowadays tank what the boys might have. Make of these as they would enjoy if your youngster possessed an out to the kind? Note specifications and equipment

Body—Size of chassis, 12x38 inches. Wheel base, 36 inches. Finish—Body hood and front, red Stripped and decorated in yellow and black. Equipment—Cast steering wheel with gas control lever Metal lamps. Bell on front of hood. Gear shift lever. License tags. Wheels, 10-inch with ½-inch rubber tire, plain bearing wire, red, with nickel plated hub caps. Weight—30 pounds. Packed K.D.—One in an extra heavy fibre carton.

No. 4L58 Automobile described above, each. **$17.80**

No. 4L58PBD 10-inch with ½-inch rubber tire, plain bearing disc wheels, red, with nickel plated hub caps, each **20.55**

Illustrating No. 4L59PBD Automobile

We like to draw attention to our other interesting pages of a similar type preceding a page set aside to invite your attention to the equipment of our automobiles. It is a complete and generous offer in the larger automobiles, that they are truly instructional to the child. Note specifications and equipment

Body—Size of chassis, 12x36 inches. Wheel base, 32½ inches. Finish—Body, hood and front, Canary yellow. Striped and decorated in red. Fenders, red. Equipment—Wood rim steering wheel with gas and spark control levers. Instrument board with clock, speedometer, oil gauge, ammeter and ignition switch. Motometer. Horn. Metal lamps. Gear shift lever. Fenders. Windshield. License tags. Wheels, 10-inch with ½-inch rubber tire, plain bearing disc red with nickel plated hub caps. Weight—38 pounds. Packed K. D.—One in a crate.

No. 4L59PBD Automobile as described above, each. **$25.60**

No. 4L59 10-inch with ½-inch rubber tire, plain bearing wire wheels, red, with nickel plated hub caps, each **22.20**

America's Foremost **Gendron-Pioneer Line** of Automobiles

"Sets the Pace" on Childrens Vehicles

The House of Co-operation Inc 1889 1924

Made Stronger and Better than Necessary. Priced very low in this selling. Inasmuch as exercise is the Elixir of Life an Automobile provides increased health and vigor for your boy. A dandy birthday or Christmas Gift.

Illustrating No. 4L41 Automobile

At a very attractive price we are offering this splendid automobile above. While it is our lowest price automobile, it nevertheless is elegant value. Note specifications and equipment

Body—Size of chassis, 10½x30 inches. Wheel base, 22 inches. Finish—Body, hood and front light blue. Striped and decorated in red and yellow. Tank light blue. Equipment—Cast steering wheel with gas lever. Motometer. Wheels, 8-inch with 3-inch rubber tire, plain bearing wire, red, with nickel plated hub caps. Weight—24 pounds. Packed K. D. One in an extra heavy fibre carton

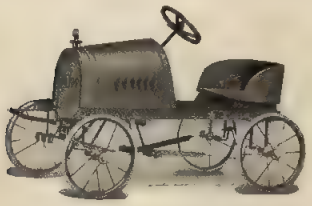
No. 4L41 Automobile as described above, each $11.68
No. 4L41PBD 8-inch with ¾-inch rubber tire, plain bearing disc wheels, red with nickel plated hub caps, each 14.75

Illustrating No. 4L42 Automobile

This automobile will afford great pleasure during leisure moments. It is an excellently designed model at the low price it is offered and will prove serviceable and most satisfactory. Note specifications and equipment

Body—Size of chassis, 12x30 inches. Wheel base, 24 inches. Finish—Body and hood, Royal blue front. Royal blue. Decorated in yellow. No bumper. Equipment—Cast Steering wheel. Radiator cap. Wheels, 10-inch with ¾-inch rubber tire, plain bearing wire, red nickel plated hub caps. Weight—24 pounds. Packed K. D. One in an extra heavy fibre carton

No. 4L42 Automobile as described above, each $11.85



Illustrating No. 4L43 Automobile

The time comes to hand when the boy is shy a playmate and to amuse himself acquire his necessary pleasure and exercise, an automobile offers this convenience and service. Note specifications and equipment.

Body—Size of chassis, 12x30 inches. Wheel base, 24 inches. Finish—Body, hood and front, Naples yellow. Striped and decorated in Portland amber. Equipment—Cast steering wheel with gas control lever. Motometer. License tags. Wheels, 10-inch with ¾ inch rubber tire, plain bearing wire, red nickel plated hub caps. Weight—24 pounds. Packed K. D.—One in an extra heavy fibre carton.

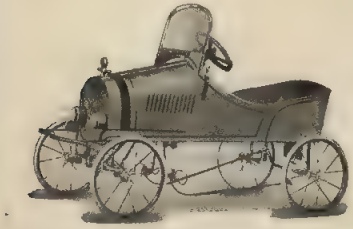
No. 4L43 Automobile as described above, each $12.20
No. 4L43PBD 10-inch with ¾-inch rubber tire, plain bearing disc wheels red with nickel plated hub caps, each 15.38

Illustrating No. 4L47 Automobile

The lines of the touneau are so pleasing and popular that this automobile number is offered the three ways described and quoted below. Note the make which because it is now delights the operator. Note specifications and equipment

Body—Size of chassis, 14x31 inches. Wheel base 28 inches. Finish—Body, hood and front red. Striped and decorated in yellow. Equipment—Cast steering wheel with gas control lever. Motometer. Horn. Mora lamps. Gear shift lever. License tags. Wheels, 10-inch with ¾-inch rubber tire, plain bearing wire wheels with nickel plated hub caps. Weight—29 pounds. Packed K. D. One in an extra heavy fibre carton

No. 4L47 Automobile as described above each $15.95
No. 4L47PBD 10-inch with ¾-inch rubber tire, plain bearing disc wheels, red with nickel plated hub caps each 18.50
No. 4L48 Same auto as No. 4L47 except uses metal lamps and gear shift lever each 14.25

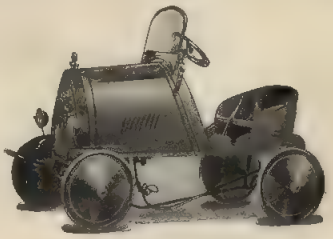


Illustrating No. 4L48 Automobile

Here is the type the boy likes—complete with windshield, headlights, motometer, etc. This low factory price is very reasonable for so thoroughly equipped an automobile. You will be surprised at the speed it shoots off at. Note specifications and equipment

Body—Size of chassis, 12x31½ inches. Wheel base, 26 inches. Finish—Body hood and front light blue. Striped and decorated in green and red. Equipment—Cast steering wheel with gas lever. Horn. Motometer. Windshield. Front lamps. License tags. Wheels, 10-inch with ¾-inch rubber tire, plain bearing wire, red, with nickel plated hub caps. Weight—30 pounds. Packed K. D.—One in a carton

No. 4L48 Automobile as described above, each $17.25
No. 4L48PBD 10-inch with ¾-inch rubber tire, plain bearing disc wheels, red, with nickel plated hub caps, each 19.86



Illustrating No. 4L51PBD Automobile

The racing type with disc wheels. We all can perceive that the red blooded boy is assuredly contented when at the wheel and ready for a spin. Workmanship and finish masterly executed. Priced very low in this selling. Note specifications and equipment

Body—Size of chassis, 14x34 inches. Wheel base 28 inches. Finish—Body hood and front Napies yellow. Striped and decorated in Portland amber. Equipment—Cast steering wheel with gas con rol lever Instrument board with clock speedometer oil gauge, ammeter and ignition switch. Motometer. Horn. Metal lamps. Gear shift lever. Windshield. License tags. Wheels, 10-inch with 3-inch rubber tire, plain bearing disc, red with nickel plated hub caps. Weight—37 Pounds. Packed K. D. one in a carton

No. 4L53PBD Automobile as described above each $23.55
No. 4L53 10-inch with ¾ inch rubber tire, plain bearing wire wheels, red with nickel plated hub caps, each 22.10
No. 4L53PDB Same auto as No. 4L53PBD except less windshield and exam ol a green striped and decorated in red and yellow each 22.30

America's Foremost **Gendron-Pioneer Line** of Coaster Wagons

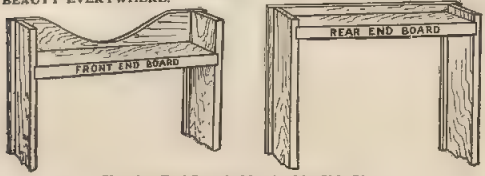
"Sets the Pace" on Childrens Vehicles

All Fitted with Retained Roller Bearing Wheels.
The Best Constructed, Most Durable, Serviceable, Smoothest and Quietest Running Coaster Wagons on the Market. Wheels are of the Automobile type.

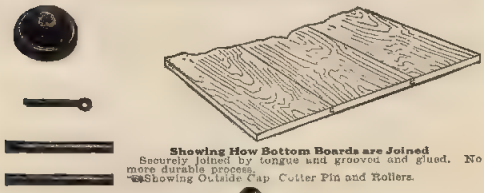
THE LAST WORD IN ROLLER BEARING HIGHEST GRADE COASTER WAGONS

In the Pioneer Coaster there is put every feature in roller construction and finish found only in the best of Roller-Bearing Coaster Wagons and in all that array of high grade there is added Improved Noise Proof Hub Caps, Improved Hub Bushings, Improved Rollers, and a body made of the finest grade of selected kiln-dried hardwood lumber with a rich De Luxe finish.

MADE STRONGER AND BETTER THAN SEEMS NECESSARY. THE DE LUXE FINISH HAS BEEN PRONOUNCED A BEAUTY EVERYWHERE.



Showing End Boards Mortised in Side Pieces
Will withstand tremendous weight



Showing How Bottom Boards are Joined
Securely joined by tongue and grooved and glued. No more durable process.

Showing Outside Cap, Cotter Pin and Rollers.

A "CLOSE-UP" VIEW OF THE NEW DISC WHEEL

For strength, service and attractiveness, the new DISC WHEELS are very desirable. Wherever shown, after scrutiny and examination, one cannot help being thoroughly convinced of its strength, long service to be expected and the genuine beauty and attractiveness. Each wheel is made of two discs of a special high grade heavy sheet steel, riveted together under a press, insuring perfect alignment. The channel for the rubber tire is made large enough so that after the rubber tire has been put on the wheel it will not roll or come off by use of the wagon. The New Retained Roller Bearings in our Disc Wheels are the very best. Never wear out, always run easily and stand hard usage.

All disc wheels are finished with an extra quality of high gloss carmine enamel and striped, which gives them a most beautiful appearance.

Illustrating Nos. 4L1, 4L2, 4L3 and 4L4 Coaster Wagons, except top of Bed of No. 4L1 does not have top rail

PIONEER COASTER WAGONS WITH RETAINED ROLLER BEARING WHEELS

The essential features of a Coaster Wagon are strength, durability, appearance and running qualities. The celebrated Pioneer Coaster Wagon possesses these qualities. It is not conjecture when you buy the "PIONEER" as they have been made for the last fifty years and lead the field in this respect.

Made in Four Sizes With Artillery Wood Wheels. Steel Tires.

No.	Body	Wheels	Each
4L1	14x32 inches	8 inches	$11 90
4L2	14x34 inches	10 inches	13 00
4L3	16x38 inches	10 inches	14 40
4L4	18x40 inches	10 inches	16 10

Pioneer Coaster Wagons with Roller Bearing, Artillery Metal Disc Wheels handsomely painted in Carmine enamel and artistically striped. Rubber Tires.

The Last Word in Coaster Wagons. This De Luxe style is positively the best. Noiselessly the children speed along to their hearts' content, enjoying the pleasure it affords every moment and improving their health to a marked degree, so essential to the development of children.

Made in Four Sizes

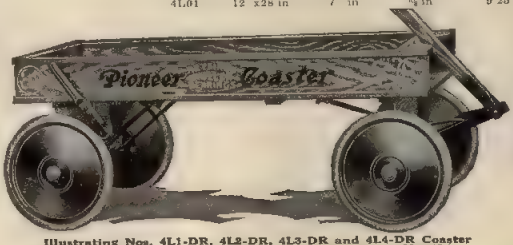
No.	Body	Wheels	Rubber Tires	Each
4L1-DR	14x32 inches	8 inches	⅝-inch	$12 55
4L2-DR	14x34 inches	10 inches	⅝-inch	15 40
4L3-DR	16x38 inches	10 inches	¾-inch	16 70
4L4-DR	18x40 inches	10 inches	¾-inch	17 60

Illustrating the "Little Tot" Wagons

PIONEER COASTER WAGONS (SMALL SIZES) WITH RETAINED ROLLER BEARING WHEELS

We quote below the line of small size coaster wagons to fill the ever increasing demand for small children. Being rubber tired, they are noiseless. Having retained roller bearing wheels they are the quietest and smoothest running made. They are made very high grade in all respects; material, finish and workmanship. **Give the child a wagon that will last and one that catches the eye and pleases the heart of all that see it. Made in three sizes; with Rubber Tire Disc Wheels and Retained Roller Bearings.**

No.	Body	Wheel	Rubber Tire	Each
4L03	9½x24 in	4 in	⅜ in	$6 20
4L04	10½x24 in	6½ in	½ in	7 60
4L01	12 x28 in	7 in	⅝ in	9 25

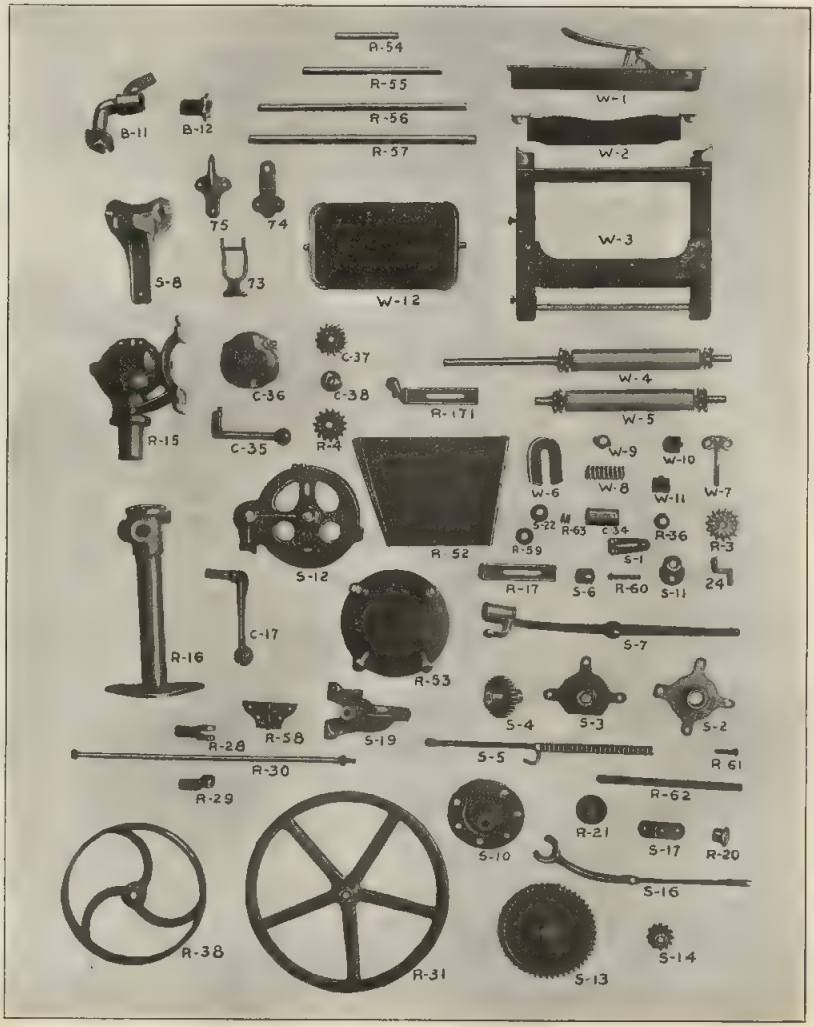


Illustrating Nos. 4L1-DR, 4L2-DR, 4L3-DR and 4L4-DR Coaster Wagons, except top of bed of No. 4L1-DR is same as No. 4L1

WASHING MACHINE REPAIR PARTS

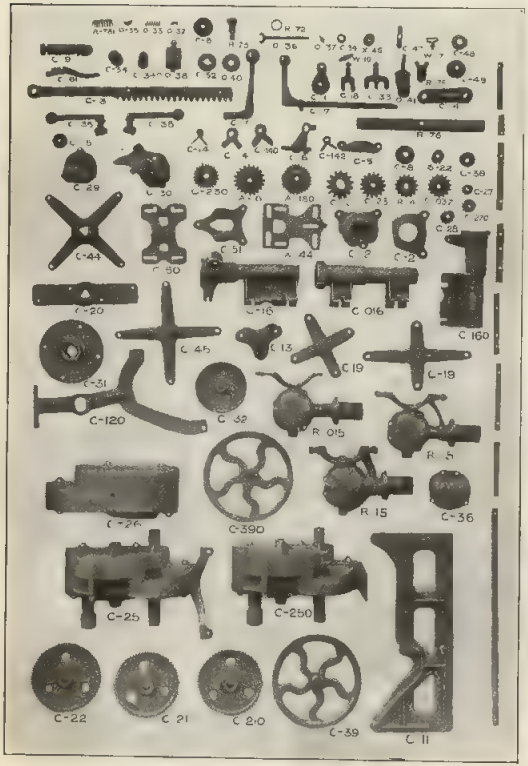
For Getz, Nos. 18E, 17P, 8E, 7P.

When ordering repair parts, state serial number and name of washer. When ordering wringer parts, give name, number and description of wringer, as we use several makes of wringers. Order by number. Specify whether by freight, express or parcel post.

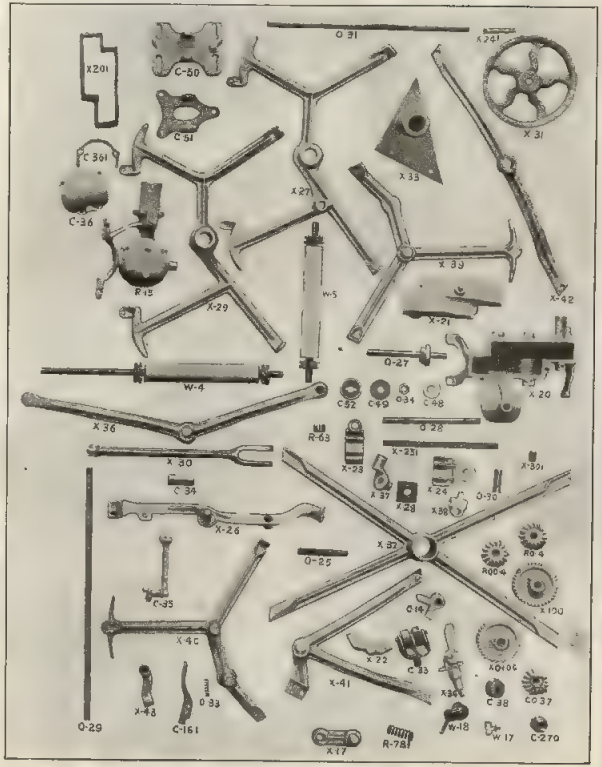


ELECTRIC WASHING MACHINE REPAIR PARTS

For Getz, Nos. 10, 12, 100, 120



For American Beauty, No. 11, and Getz Nos. 9 and 4

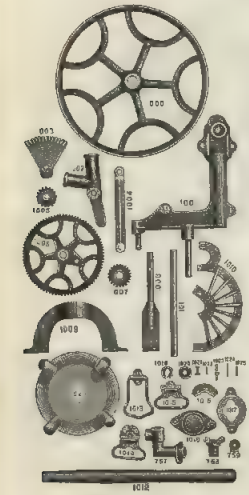


When ordering repair parts, state serial number and name of washer. When ordering wringer parts, give name, number and description of wringer, as we use several makes of wringer. Order by number. Specify whether by freight, express or parcel post. See Price List on opposite page.

WASHING MACHINE REPAIR PARTS

When Ordering Parts, State Name of Machine and Nos. of Parts

QUALITY WASHER.



Quality Washer Parts

Nos.	Each.
1000 Fly Wheel	$4 72
1001 Frame	4 06
1002 Lever Socket	2 70
1003 Gear	2 00
1004 Connecting Rod	28
1005 Post Gear Wheel	82
1006 Speed Gear Wheel	4 06
1007 Gear Wheel for Fly Wheel	70
1008 Post	68
1009 Gear Cover	82
1010 Gear Cover	1 34
10.1 Gun Rod	40
1012 Lever Operating Handle	28
(1013 and 1014) Lid Fastener	40
1015 Side Handle and Plate	28
1016 Small Dasher Collar	14
1017 Large Dasher Collar	$ 28
1018 Cap or Shield for Dasher	28
1019 Ball Bearing	1 34
1020 Ball Bearing	1 34
1021 Bolt for fastening No. 1010	07
1022 Cotter Pin for fastening No 1004	06
1023 Pin for Nos 1002 and 1006	14
1024 Spring Cotter for Fly Wheel Shaft	06
1025 Taper Pin for Nos. 1002 and 1003	14
1026 Inside Wheel or Dasher	54
1027 Cover for Tub (not illustrated)	1 34
1028 Leg for Tub (not illustrated)	28
1029 Cross Piece for Legs (not illustrated)	28
1030 Rod for Legs (not illustrated)	28
(757, 758 and 759) Spigot, Plug for same, Washer for same (not illustrated)	1 34

REGAL WASHER.

Regal Washer Parts

Nos.	Each
800—Fly Wheel (not mailable)	$3 38
801—Frame	2 70
802—Lever Socket	2.00
803—Combination Socket and Gear	2.00
804—Connecting Rod	.28
805 -Post Gear	.82
806—Speed Gear (casting numbered 506)	.82
807 Gun Rod	.40
808 -Post	.68
809—Gear Cover	.40
810—Gear Cover for No. 806 (not illustrated)	.14
811—Wrench	.14
812—Lever Handle	.28
813—Lid Fastener	.40
814 -Side Handle with Plate	.28
815—Small Collar for Dasher	.14

Nos.	Each
817—Large Collar for Dasher	.28
818—Cap or Shield for Dasher	.28
819—Inside Wheel or Dasher	94
820, 821 and 822—Pins	.06

ECLIPSE VACUUM WASHER.

No. 1100—Fly Wheel	Each, $3 40
No. 1101 Large Frame	" 4 06
No. 1102 -Small Frame with ball bearing	" 5 00
No. 1103—Large Gear Wheel	" 2.70
No. 1104—Connecting Rod	" 28
No. 1105 Handle Socket	" 2 70
No. 1106 --Socket for Top of Vacuum Dasher for No. 1111	" 28
No. 1107 Gear Cover	" 82
No. 1108—Small Gear Wheel	" 1 00
No. 1109 Main Shaft	" .40
No. 1110—Pin for Nos. 1108 and 1109	" .06
No. 1111 Vacuum Dasher, illustrated as No 1118	" 5 00
No. 1112—Wing Nut for No. 1109	" 14
No. 1113—Ball Bearing for Frame No. 1102	" 1 34
No. 1114—Pin for Frame No. 1101	" 06
No. 1115—Wrench	" .14
No. 1116—Operating Handle	" 28
No. 1117 Spigot	" 1 34
No. 1118—⅜-inch Bolt for No. 1106	" 10
No. 1119 Pin for Gear Wheel No 1103	" 06
No. 1120—Large Cotter Pin	" 1 86
No. 1121—Small Cotter Pin	" 06
No. 1122 -Cover Part for Lid Fasteners	" .20
No. 1123—Side Handle and Plate	" .28
No. 1124 Tub Part for Lid Fastener	" .20

Prices quoted are manufacturer's list, subject to special discount.

ELECTRIC WASHER REPAIR PARTS.

Illustrated on Opposite Page

FOR AMERICAN BEAUTY NO. 11 AND GETZ NOS. 9 AND 4 MACHINES.

A copy of this list with illustrations of parts is enclosed with each Machine. When ordering repair parts, state serial number and name of washer. When ordering wringer parts, give name, number and description of wringer, as we use several makes of wringers. Order by number. Specify whether by freight, express or parcel post.

Prices Quoted are Manufacturer's List, Subject to Special Discount.

Nos.	Articles	Each
C-14	Caster leg (Used until June, 1922)	$ 0.40
C-15	Roller for caster (Used until June, 1922	.25
C-33	Double caster post (Used until June, 1922	.50
C-34	Coupling attached to wringer shaft in X-33	.65
C-35	Malleable wringer clutch shifting handle	1.25
C-36	Wringer gear case cover attached to R-15	.60
C-037	Wringer clutch gear	1 10
C-38	Steel clutch	1.25
C-48	⅝ in spring washer	.25
C-49	Collar riveted to ⅝ in. threaded shaft	.60
C-50	Belt tightener base (Used until June, 1923)	1.00
C-51	Belt tightener base (Used until June, 1922	1 00
C-52	Slotted Collar	.50
C-161	Handle for wringer lock	.75
C-270	Machine cut spur gear steel, 12 teeth (In gear case)	1.50
C-361	Cork gasket for R-15	.25
R-04	Bevel gear with ⅜ in. bore	.90
R-004	Bevel gear with ¾ in. bore	.90
R-15	Gear housing attached to wringer frame	3.00
R-53	1 in spring on bottom ⅛ x 24 in wringer shaft	.30
R-75	Brass drain screw plug	.60
R-781	1x2-¼ in spring For belt tightener base)	.50
O-25	⅝x4⅝ in shaft	.30
O-26	⅝x5⅝ in. shaft	.30
O-27	⅝x7 in. shaft threaded on end	75
O-28	⅝x8 in shaft	.40
O-29	⅝x24½ in. shaft	.75
O-30	⅝x2⅜ in. pin	.60
O-31	⅝x18⅝ in shaft	.75
O-32	⅝x⅞ in. spring for ⅜ in. ball bearing back of C-35	.25
O-33	⅝x2 in spring for C-160	.40
C-34	⅜ in. semi-finished hexagon nut 18 thread	.25
	Copper tub (Getzit)	20.00
	Lid for Getzit copper tub	3.00
	Drain spout for Getzit tub	1.50
	Copper tub (American Beauty)	30.00
	Lid for American Beauty copper tub	4.50
	Drain spout for American Beauty	1.50
	Motor Pulley 2½ in. O. D.	1.10
	Motor pulley, 2⅛ in O D	1.10
	Endless Vulco cord "V" belt (Getzit) 37 in.	2.00
	Endless Vulco cord "V" belt (A. B.) 41 in.	2.25
	Push button switch	1.00
	Case for push button switch	.80
	No. 6 Taper pin 1¾ in	.05
	No. 6 Taper pin 1⅞ in	05
W-1	Wringer brace with pressure release	1.25
W-2	Wringer brace with lugs for spring	.80
W-3	Main wringer frame	2.00
W-4	Lower wringer roll, 11 in	
W-5	Upper wringer roll, 11 in	
W-6	Guard for wringer cogs	.50
W-7	Pressure screw	.30
W-8	Pressure spring	.40
W-9	Iron lug that fits spring	.50
W-10	Lower wood bearing	35
W-11	Upper wood bearing	.35
W-13	Reversible water board	1.25
W-14	Lower wringer roll, 12 in For metal wringer)	
W-15	Upper wringer roll, 12 in. (For metal wringer)	.30
W-17	Cabinet door turn button	.30
W-18	Caster post with caster complete	1.00
W-181	Pressed steel socket for caster W-18	.50
X-17	Crank	.75
X-20	Gear case	4.00
X-21	Gear case cover	1.50
X-22	Caster socket	.60
X-23	Connection for double link and connecting rod	1.00
X-24	Link swivel for double link	1.00
X-25	Right side of main frame support	2.25
X-26	Leg or lower brace for casting X-41	1 00
X-27	Left cradle tub support	3.25
X-28	Steel sliding link support for double link	1.50
X-29	Right cradle tub support	3.00
X-30	Connecting rod	1.25
X-31	8½ in groove drive pulley	2.00
X-32	Left side of main frame support	2.50
X-33	Wringer support	2.50
X-34	Caster release complete	1.25
X-36	Tub shifting lever	1.25
X-37	Link swivel for single link	.60
X-38	Sliding link support for single link	.60
X-39	Left cradle tub support	2.00
X-40	Right cradle tub support	2.00
X-41	Right side of main frame support	1.25
X-42	Left side of main frame support	1.50
X-43	Connection for single link and connecting rod	.60
X-44	Belt tightener base	1.00
X-60	Complete single shifting link consisting X-37, X-38, X-43, ⅝x9 in. shaft, ⅛ in. ball bearing and ⅝x⅞ in spring	3.50
X-61	Complete double shifting link consisting X-23, X-24, X-38, two ⅝ in ball bearings, two ⅝x⅞ in. springs, two⅝x10½ in square shafts	6.50
X-100	Machine cut spur gear ⅝ in. bore, 36 teeth	2.25
X-0100	Machine cut spur gear ⅝ in. bore, 36 teeth	2.25
X-201	Cork gasket for X-30	.40
X-231	⅜x10⅝ in. sq. shaft	.75
X-241	⅝x4½ in. shaft for center hub X-20	.30
X-301	⅝x⅜x1-⅛ in. steel bushing for X-23 and X-43	.30

FOR GETZ CYLINDER MACHINES NOS. 10, 12, 100 AND 120

A copy of this list with illustrations of parts is enclosed with each Machine. When ordering repair parts, state serial number and name of washer. When ordering wringer parts, give name, number and description of wringer, as we use several makes of wringer. Order by number. Specify whether by freight, express or parcel post.

Prices Quoted are Manufacturer's List, Subject to Special Discount.

Nos.	Articles	Each
C-1	Swivel Caster roller attached	1 50
C-2	Housing for spur gear, C-10	.75
C-3	Machine cut rack bar	5.00
C-4	Crank	.75
C-5	Bracket for C-7	.50
C-6	Bracket for C-7	.45
C-7	Cylinder shifting lever	.80
C-8	Roller attached to C-1	.75
C-9	Cylinder drive shaft	2.75
C-10	Machine cut spur gear, 14 teeth	2.75
C-11	Main frame	4.50
C-12	Main frame support	2 00
C-13	Galvanized cylinder bracket	1.50
C-14	Caster leg	.45
C-15	Roller for caster	.25
C-16	Wringer support	3.00
C-17	Wringer lock lever	.75
C-18	Single caster post	.25
C-19	Galvanized cylinder support	2.00
C-20	Galvanized cylinder axle	2.50
C-21	Machine cut spur gear, 66 teeth	3.00
C-22	Machine cut spur gear, 92 teeth	3.25
C-23	Machine cut spur gear, 16 teeth	1 50
C-25	Gear case	5.00
C-26	Gear case cover	2 00
C-27	Machine cut steel spur gear, 12 teeth	1.50
C-28	Machine cut steel spur gear, 12 teeth	1.50
A-18	Spur gear, 20 teeth	2.00
C-29	Covering for casting C-30	.50
C-30	Bevel gear housing	1.25
C-31	Galvanized cylinder bracket	3.00
C-32	Pulley for engine operation	1.50
C-33	Double caster post	.50
C-34	Coupling attached to wringer shaft in R-16	.60
C-35	Malleable wringer clutch shifting handle	1.25
C-36	Housing for wringer gears, attached to R-15	.60
C-37	Wringer clutch gear	1.10
C-38	Malleable clutch	1.25
C-40	Belt tightener base	.50
C-41	Belt tightener arm	.75
C-42	Belt tightener roller	.40
A-15	10-inch grooved drive pulley	2.50
S-22	Clutch attached to shaft	.40
R-4	Bevel gear with ⅛-inch hub	.50
R-15	Gear housing attached to wringer frame	2.75
R-53	1-inch spring concealed in casting R-15	.40
R-65	⅜x5-inch shaft	.40
R-66	⅝x8¾ inch shaft	.40
R-67	⅜x7⅜ inch shaft	.50
	⅜x7 inch shaft	.50
R-69	⅝x7½ inch shaft	.50
R-70	Galvanized gear shield	2.00
R-71	Galvanized tub lid	3.00
R-710	Copper tub lid	4 25
R-72	Brass Ring	.25
R-73	Steel stud for roller C-8	.85
R-74	⅝x2¼ inch shaft	.40
R-75	Brass Drain Plug	1.25
R-76	Steel tube, 14 inch	.80
R-77	⅝x24 inch shaft	.75
	Drain spout	3 00
	Wood cylinder	10.00
	Wood cylinder lid	2 00
	Endless "V" belt	2.75
W-1	Wringer brace with pressure release	1.50
W-2	Wringer brace with lugs for spring	.80
W-3	Main wringer frame	1.60
W-4	Lower wringer roll	3.60
W-5	Upper wringer roll	2.50
W-6	Guard for wringer cogs	.75
W-7	Pressure screw	.40
W-8	Pressure spring	.60
W-9	Iron lug that fits in spring	.40
W-10	Lower wood bearing	.60
W-11	Upper wood bearing	.50
W-13	Reversible water board	.75

Genuine Hand Woven Reed Furniture At Factory Prices

Expertly Made and Finished. Very Reasonably Priced in This Selling.

THE PLAIN FINISHES ARE: Light or Dark Baronial Brown.

THE FANCY FINISHES ARE: Frosted Brown, Old Ivory, French Gray, Blue and Gold, Green and Gold, Silvertone Black and Blootan (which is Tan with a blue rub).

BE SURE TO SPECIFY FINISH WANTED WHEN ORDERING

REED JUNIOR LAMP

Splendid value in our low price for this Beautiful Junior Lamp. Made of genuine reed, hand woven. Height 58 inches. Diameter of shade, 20 inches. Silk lined and heavy silk fringe. Has two light pull chain cluster, silk cord and plug. (Choice of Plain or Fancy finishes listed above).

No.		Each
3W6317P	Plain Finish.	$34.80
3W6317F	Fancy Finish.	38.50

REED BIRD CAGE AND STANDARD

This is a very attractive design that is especially low priced in this selling. It is expertly constructed of genuine reed and woven by hand. Choice of any of the Plain or Fancy finishes above. Has removable seed cup. Height, 72 inches. Furnished complete as shown, or bird cage only without the standard if desired.

No.		Each
3W3747 36P	Plain Finish. ..	$25.85
3W3747 36F	Fancy Finish.	29.60

BIRD CAGE ONLY IF DESIRED

No. 3W3736P Bird Cage only in Plain Finish, each. **$13.15**

No. 3W3736F Bird Cage only in Fancy Finish, each. **15.10**

REED BIRD CAGE AND STANDARD

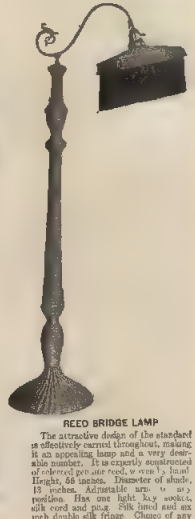
This high grade number is featured with the tray. It is expertly constructed of selected genuine reed, woven by hand. Choice of any of the finishes listed above. Has removable seed cups, metal lined tray and artistic durable Composition decorations. Height, 72 inches. Furnished complete as shown or bird cage only without the standard, if desired.

No.		Each
3W3747 15P	Plain Finish.	$30.60
3W3747 15F	Fancy Finish.	34.30

BIRD CAGE ONLY IF DESIRED

No. 3W3715P Bird Cage only in Plain Finish, each. **$17.85**

No. 3W3715F Bird Cage only in Fancy Finish, each. **19.75**



REED BRIDGE LAMP

The attractive design of the standard is effectively carried throughout, making it an appealing lamp and a very desirable number. It is expertly constructed of selected pole cane reed, woven by hand. Height, 68 inches. Diameter of shade, 13 inches. Adjustable arm to any position. Has one light key socket, silk cord and plug. Silk lined and six inch double silk fringe. Choice of any of the plain or fancy finishes listed above.

No.		Each
3W6402/12P	Plain Finish ..	$50.75
3W6402/12F	Fancy Finish. ...	53.90

REED JUNIOR LAMP

This is a very high grade Reed Junior Lamp. It is expertly constructed of highest quality selected pound reed and woven very closely by hand. The standard possesses pronounced richness and individuality. Height, 58 inches. Shade measures 18x27 inches. Has two light pull chain cluster, silk cord and plug. Silk lined and six inch double silk fringe. Choice of any Plain or Fancy Finish described above.

No.		
No. 3W6302/7P	Plain Finish, each..	$70.50
No. 3W6302/7F	Fancy Finish, each...	74.25

COMBINATION REED FERNERY AND BIRD CAGE

Made of genuine reed, hand woven. Splendid value at our attractive low price. The depth of fernery is 42 inches, 10 inches wide and 8 inches deep. Height over all 68 inches. Removable seed cups and metal lined tray. (Specify finish.)

No.		
No. 3W3772/57P	Plain Finish, each.	$45.10
No. 3W3772/57F	Fancy Finish, each.	48.90

COMBINATION REED BIRD CAGE, AQUARIUM AND FERNERY

Made of genuine reed, hand woven. Very reasonably priced in this selling. Width, 32 inches. Height over all 68 inches. Removable seed cups and metal lined tray. Has two galvanized metal pans and one round glass aquarium, all of which are easily removable. (Specify finish.)

No.		
No. 3W3774/57P	Plain Finish, each.	$51.70
No. 3W3774 57F	Fancy Finish each.	55.45

REED JUNIOR LAMP

This is unquestionably one of the richest lamps on the market. The design of the standard is unusually graceful and very effective. It is expertly constructed of very fine round reed entirely woven by hand. Height, 58 inches. Diameter of shade 24 inches. Silk lined and six inch double row silk fringe to match. Has two light pull chain cluster silk cord and plug. While it seemingly might be priced high there is wonderful intrinsic value in the high quality material and mastership workmanship.

No.		
No. 3W6316/8P	Plain Finish, each..	$85.50
No. 3W6316/8F	Fancy Finish, each. .	89.30

F. O. B. CHICAGO FACTORY

Genuine Reed Furniture of Quality at Factory Prices

SUPERIOR QUALITY. VERY DURABLY CONSTRUCTED. UNSURPASSED FINISH. PRICED VERY LOW.

The Finishes are: "A"—Baronial Brown, Royal Blue, Cream, Black, Gray; "B"—Frosted Brown Midnight Blue, Old Ivory, Frosted Black, Frosted Green. "C"—Gray and Gold, Blue and Gold, Calcos Gray with Blue Border, Cream with Blue Border

REED FLOOR LAMP

This is a very charming design and a wonderful seller in a truly high grade floor lamp. Made of selected genuine reed and woven. Fitted with 3 light pull chain socket, silk cord and plug. Height 86 inches. Diameter of shade 26 inches. Hand rest Grade "H" Better Tapestry. Choice of any color in the three finishes listed above.

No.		Each
3Q278A	Any Finish "A"	$52.80
3Q278B	Any Finish "B"	55.00
3Q278C	Any Finish "C"	57.40

If silk Fringe is wanted instead of Cretonne add $3.60 as extra.

REED FERNERY

Made of genuine reed, woven by hand. Has plain watering pan. Height 30 inches. Length, 30 inches. Width, 8 inches. Expertly constructed and well finished. Especially priced in this selling.

Finishes	"A"	"B"	"C"
No. 3Q342 Each	$9.40	$10.20	$11.40

REED FOOT REST

It is surprising how you can rest and relax with the aid of a foot rest. This splendid number is of high grade construction and finish throughout. It is expertly made of fine genuine reed, woven by hand. Size 16x26 inches. Covered with the better grade H Cretonne.

Finishes	"A"	"B"	"C"
No. 3Q137 Each	$20.40	$21.60	$22.80

For Tapestry or Velour covering instead of Cretonne, add $1.80 per extra.

Same as above, except made of round reed—the finest obtainable, (Round, clean and fine)

Finishes	"A"	"B"	"C"
No. 3Q614 Each	$26.40	$27.60	$28.80

REED BRIDGE LAMP

This is a most magnificent design and surprisingly low priced in this selling. Made of choicest genuine reed, the best obtainable (round, clean and fine), hand woven. Fitted with single light pull chain cluster, silk cord and plug. Adjusts to arm. Hand rest Grade "H" Better Cretonne Tapestry. 20 inches. Diameter of shade, 12 inches. Choice of any color in the three finishes listed above.

Finishes	"A"	"B"	"C"
No. 3Q641 Each	$28.80	$30.00	$31.20

If silk Fringe is preferable to the Cretonne, the same is obtainable at the right additional rate of $1.80 as extra.

REED BIRD CAGE AND STAND

This is a very popular and high grade number that has proven a wonderful seller. It is expertly constructed and finely finished, suitable indeed for any living room. Made of selected, splendid reed, hand woven. Height 80 inches. Choice of any color in the three finishes listed above.

No.		Each
3Q275A	Any Finish "A"	$47.40
3Q275B	Any Finish "B"	49.80
3Q275C	Any Finish "C"	52.20

ROUND REED DESK

The attractive desk offers great convenience in the home. Being made of only choicest reed—the best obtainable (round, clean and fine), hand woven, it creates an atmosphere of cheerfulness in addition to its practicability. Fitted with drawer and two pockets as shown. Height, 30 inches. Top, 17x20 inches. Expertly constructed and finished in the best possible manner.

Finishes	"A"	"B"	"C"
No. 3Q631 Each	$34.80	$36.00	$37.20

STANDARD REED CHAIR

Suitable as a fine reception or porch settee. It is expertly constructed of selected genuine reed, the best obtainable (round, clean and fine), hand woven. Height of back, 39 inches. Excellently finished with choice of three colors.

Finishes	"A"	"B"	"C"
No. 3Q632 Each	$18.00	$19.20	$20.40

REED SEWING BASKET

Makes a lovely present to Mother, which she will admire and greatly appreciate. Durably constructed of genuine reed, woven by hand. Height 27 inches. Size of top, 12x18 inches. Choice of any color in three finishes listed herewith.

No.		Each
3Q272A	Any Finish "A"	$18.00
3Q272B	Any Finish "B"	19.20
3Q272C	Any Finish "C"	20.40

FLOWER STAND

Made of genuine reed, woven by hand. Fitted with self-watering pan. Height, 33 inches. Length, 30 inches. Width, 10 inches.

Finishes	"A"	"B"	"C"
No. 3Q468 Each	$26.40	$27.60	$28.80

Same as above, except made of genuine round reed—the best obtainable (round, clean and fine,

Finishes	"A"	"B"	"C"
No. 3Q622 Each	$26.40	$27.60	$28.80

REED FLOWER STAND AND BIRD CAGE WITH SELF-WATERING PAN

Made of genuine reed, hand woven. Height over all, 70 inches. Flower measures 10x30 inches. Self-watering pan.

Very durably constructed and expertly finished. Choice of any color in three finishes listed above.

No.		Each
No. 3Q271A	Any Finish "A"	$46.20
No. 3Q271B	Any Finish "B"	48.60
No. 3Q271C	Any Finish "C"	51.00

F. O. B. CHICAGO FACTORY.

Extra Fine Quality Genuine Hand Woven Reed Articles at Factory Prices

Durably Constructed and Elegantly Finished. Especially Low Priced in This Selling. "ADD-A-PIECE" of Reed Furniture which is suitable and appropriate for any room in the home.

OUR THREE FINISHES ARE AS FOLLOWS:

Finish "A" -Sarcenet Brown, Royal Blue, Cream, Black, Gray.
Finish "B" -Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green.
Finish "C" -Gray and Gold, Blue and Gold, Calico, Gray with Blue Border, Cream with Blue Border

REED HIGH CHAIR

At a very low and inviting price we are offering this genuine reed hand woven high chair which is of standard height. Farmi-bed in three finishes with choice of colors enumerated. Durably constructed.

No. 3Q334A	Any Finish "A", each	$16.20
No. 3Q334B	Any Finish "B", each	16.80
No. 3Q334C	Any Finish "C", each	17.40

REED CHILD'S ROCKER

Durably constructed of genuine reed hand woven. Height of seat, 16 inches, width of seat 12 inches. Standard height. Choice of any color in the three finishes mentioned above.

No. 3Q333A	Any Finish "A", each	$14.40
No. 3Q333B	Any Finish "B", each	15.00
No. 3Q333C	Any Finish "C", each	15.60

ROUND REED CHILD'S ROCKER

This is positively the highest quality child's rocker made. It is expertly constructed of the best reed obtainable (round, close and fine), hand woven. Height of back, 16 inches; width of seat, 12 inches.

No. 3Q626A	Any Finish "A", each	$19.20
No. 3Q626B	Any Finish "B", each	20.40
No. 3Q626C	Any Finish "C", each	21.60

ROUND REED HIGH CHAIR

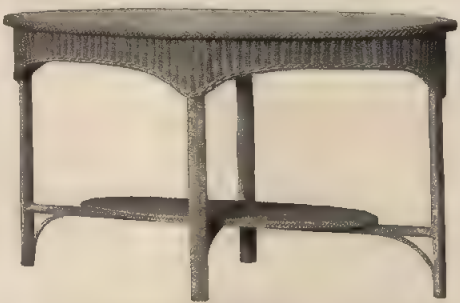
If nothing is too good for your darling then you will want the strictly highest quality high chair made. It is expertly constructed of the best reed obtainable (round, close and fine), hand woven. Substantial model.

No. 3Q627A	Any Finish "A", each	$21.60
No. 3Q627B	Any Finish "B", each	22.80
No. 3Q627C	Any Finish "C", each	24.00

TEA WAGON

Made of selected genuine reed, woven by hand. Glass tray. Lined with better cretonne in Grade H or Tapestry, under glass. Top, 20x16 inches. Tray, 21x14 inches. Height, 28 inches. 14-inch Artillery wood wheels, rubber tired.

Finishes	A	B	C
No. 3Q187 Each	$34.20	$36.00	$37.80



OVAL REED TABLE

Made of selected genuine reed—the best obtainable (round, close and fine)—hand woven. Hardwood top, size 20x31 inches, stained to harmonize and match finish ordered. Workmanship and finish masterly executed.

Choice of finishes:	A	B	C
No. 3Q617 Each	$46.80	$48.20	$51.60

BREAKFAST TABLE—DROP LEAF GATELEG STYLE

Made of selected genuine reed, hand woven. Highly polished wood top. Height, 30 inches. Size open, 48x32 inches, size closed, 17x42 inches. Durably constructed and elegantly finished.

Choice of finishes:	A	B	C
No. 3Q300 Each	$44.40	$45.20	$46.20

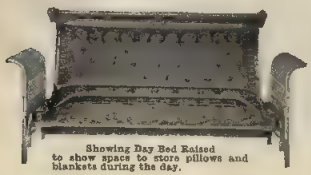
TEA WAGON

Made of selected genuine reed, woven by hand. Glass tray. Lined with better cretonne in Grade H, or Tapestry, under glass. Tray, 21x14 inches. Top, 23x16 inches. Height, 28 inches. 14-inch Artillery wood wheels, rubber tired.

Finishes	A	B	C
No. 3Q186 Each	$39.00	$40.80	$42.60

A Splendid Line of Revolving Day Beds at Factory Prices

A Single Couch by Day. They are instantaneously converted into a full size bed at night. Operation is simple and easy. Scarcely without effort Day Bed opens or closes in one motion – No extraordinary strength necessary). Responds so freely that a child can operate it.

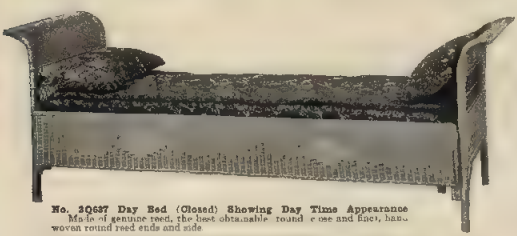


Showing Day Bed Raised to show space to store pillows and blankets during the day.

These Day Beds are very luxurious, resilient and comfortable. Of expert and durable construction. Built to last a lifetime.

Choice of any A, B or C finishes and five grades of coverings. Finishes listed below.

Showing Day Bed Opened Makes a full size bed, 52x75 inches



No. 3Q637 Day Bed (Closed) Showing Day Time Appearance
Made of genuine reed, the best obtainable, round close and fine, hand-woven round reed ends and side

No. 3Q637 DAY BED

(Size closed, 27x76 inches.) (Size opened, 52x76 inches.)
Complete with Cotton filled mattress or pad as shown.

No.	Covering	Any Finish A	Any Finish B	Any Finish C
3Q637H	Better Cretonne, each.	$105.60	$108.00	$110.40
3Q637I	Superior Cretonne, each	114 00	116.40	118.80
3Q637K	Ordinary Tapestry, each.	138.00	140.40	142.80
3Q637L	Superior Tapestry, each	169.20	171.60	174.00
3Q637LV	Ordinary Velour, each.	169.20	171.60	174.00

Oblong Pillows as shown furnished at following prices: These Pillows are Kapok Filled,

No. 3Q1	Better Cretonne, each	$ 4.80
No. 3Q2	Superior Cretonne, each	5.40
No. 3Q3	Ordinary Tapestry, each	8.40
No. 3Q4	Superior Tapestry, each	11.40
No. 3Q5	Ordinary Velour, each.	11.40

No. 3Q633 DAY BED

(Size closed, 27x76 inches.) (Size opened, 52x76 inches.)
Same day bed as No 3Q637 above, except it has flounce on side in place of reed. Also has mattress or pad as shown. Ends are made of genuine reed, the best obtainable (round, close and fine), hand woven.

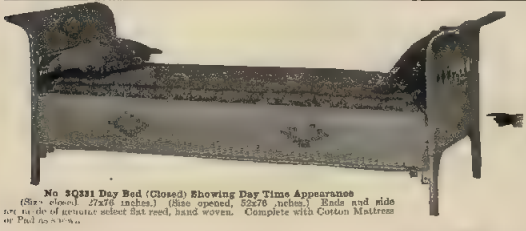
No.	Covering	Any Finish A	Any Finish B	Any Finish C
3Q633H	Better Cretonne, each	$ 88.80	$ 91.20	$ 93.60
3Q633I	Superior Cretonne, each	97.20	99.60	102.00
3Q633K	Ordinary Tapestry, each	121.20	123.60	126.00
3Q633L	Superior Tapestry, each	152.40	154.80	157.20
3Q633LV	Ordinary Velour, each.	152.40	154.80	157.20

Should Kapok Filled Oblong Pillows to match be wanted, prices are quoted above.

THE FINISHES ARE AS FOLLOWS:

A Baronial Brown, Royal Blue, Cream, Black, Gray
B Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green.
C Gray and Gold, Blue and Gold, Calcos, Gray with Blue Border, Cream with Blue Border.

No. 3Q633 Day Bed (Closed) Showing Day Time Appearance



No 3Q331 Day Bed (Closed) Showing Day Time Appearance
(Size closed, 27x76 inches.) (Size opened, 52x76 inches.) Ends and side are made of genuine select flat reed, hand woven. Complete with Cotton Mattress or Pad as shown.

No. 3Q331 DAY BED

No.	Covering	Any Finish A	Any FinishB	Any Fmish C
3Q331H	Better Cretonne, each	$ 93.00	$ 97.80	$102 60
3Q331I	Superior Cretonne, each	101.40	106.20	111.00
3Q331K	Ordinary Tapestry, each.	125.40	130.20	135.00
3Q331L	Superior Tapestry, each	156.60	161.40	166.20
3Q331LV	Ordinary Velour, each.	156.60	161.40	166.20

Should Kapok Filled Oblong Pillows to match be wanted, prices as quoted above.

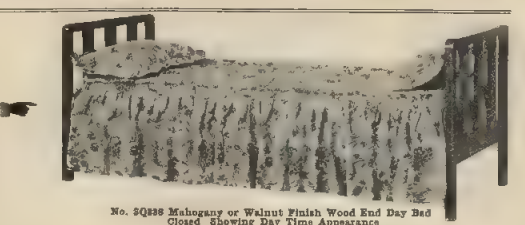
The Finishes A, B and C are listed above. Be sure to state finish wanted when ordering.

No. 3Q338 MAHOGANY OR WALNUT FINISH WOOD END DAY BED

Same style and construction of day beds as shown above. (Size closed, 27x76 inches.) (Size opened, 52x76 inches.) Complete with Mattress or pad flounceside. **Choice of five grades of coverings:**

No.	Covering	
3Q338H	Better Cretonne, each.	$ 73.20
3Q338I	Superior Cretonne, each.	81.60
3Q338K	Ordinary Tapestry, each.	105.60
3Q338L	Superior Tapestry, each	136 80
3Q338LV	Ordinary Velour, each.	136.80

Should Kapok Filled Oblong Pillows to match be wanted, prices are quoted above



No. 3Q338 Mahogany or Walnut Finish Wood End Day Bed Closed Showing Day Time Appearance

THE GRASSELLI POWDER COMPANY

CLEVELAND, O.
PITTSBURGH, PA.
BLUEFIELD, W. VA.
NEWCASTLE, PA.
CLARKSBURG, W. VA.
BROWNSVILLE, PA.

ESTABLISHED 1839
CHEMICALS
ZINC
GRASSELLI
EXPLOSIVES
DYESTUFFS

PHILADELPHIA, PA.
CHICAGO, ILL.
BIRMINGHAM, ALA.
HAZLETON, PA.
POTTSVILLE, PA.
WILKESBARRE, PA.

There are many factors to be taken into consideration when choosing explosives for coal mining purposes, such as height of seam, texture of coal, system of mining, position and size of binder, if any, kind of coal desired, condition of rooms or entries after shot is made, etc. It would be useless to attempt to describe in detail the various features of our powders in regard to these conditions which vary so greatly, but we are ready at all times to have one of our representatives call at your operation and go over your proposition with you, whether it be shaft sinking, driving a tunnel, size of coal produced, or explosives cost.

Permissibles

In the years past we have developed and obtained approval of Bureau of Mines as to permissibility of use in gaseous and dusty mines, of a great many permissible powders, but after exhaustive study and tests in actual field operations by our blasting experts, who are technically trained and practical coal miners, it was found that we now have a half-dozen powders possessing all the qualities necessary to meet the peculiar requirements of the various coal fields east of the Mississippi.

We have specialized in

Grasselli No. 1
Grasselli No. 5
Grasselli No. 6
Grasselli 2 LF
Grasselli 5 LF
Grasselli 6 LF

and the steadily increasing demand for them is evidence of the uniform high quality this standardization has enabled us to embody in them. The first three mentioned (which were originally known as Cameron I-A, Mineite 5-D and Mineite 6-D) are the ones our success in coal fields has been based upon. The others are of more recent development and wherever tried have always given the expected results.

Each one of Grasselli permissibles is distinctive as to execution and so balanced as to insure a maximum of energy properly applied to the coal. With these powders, once the proper placing of shots and quantity of charge is determined, no further experimenting is necessary.

Grasselli No. 1 and Grasselli 2 LF

Of quick hard-hitting action especially adapted to production of coking coal and for shooting coal of extremely hard texture. Also very effective in rock work.

Grasselli No. 5 and Grasselli 5 LF

Most desirable and economical powders where coal is not of extremely hard texture. They are ideal lump coal producers, the strata of the lumps being preserved so it will stand rough handling of cars in transit.

Grasselli No. 6 and Grasselli 6 LF

These two powders are not quite so speedy as the other four Grasselli permissibles, but of enormous pressure. They are so balanced as to speed, strength and expansion to make them especially adapted to production of lump coal in certain districts.

Dynamites

The Grasselli Powder Company's dynamites, as well as permissible powders, are sold under the Grasselli trade mark, which is stencilled on each cartridge and box.

Ammonia Grade

Of great heaving and spreading power. For all around work. Made in strengths from 20% to 60%. A recent addition to the many advantageous features of Grasselli Ammonia Dynamite is its ability to withstand the effects of wet bore holes.

Nitro Glycerin Grade

Of powerful, concentrated and hard-hitting action.

Gelatin

For sinking shafts, driving tunnels and other rock work. Will shoot when submerged in water, and is free from objectionable fumes.

Special Grades

When an explosive not quite as strong as dynamite, but stronger than black powder, is required, our special grades, Grasselli F, FF, and FFF are recommended. They are of graduated strengths, put up in cartridge form.

All LF (that is low freezing) grades of Grasselli High Explosives may be relied upon to withstand the lowest temperature conditions.

"B" Blasting Powder

For use in mines that are not gaseous.

Formulas followed in the manufacture of the various brands of black blasting powder differ only slightly, but the methods and thoroughness of treatment of the ingredients vary to a great extent. Grasselli brand powder is made of carefully selected raw materials, thoroughly incorporated, hard pressed and well glazed, insuring a maximum energy. It is put up in seven sizes of granulation, ranging from CCC, which is of a slow heaving and lifting action, to 4 F, for shooting hard coal, requiring a sharp, quick action.

Blasting Supplies

A complete stock of blasting supplies, such as fuse, caps, electric caps, blasting machines, cables, etc., is also carried.

SPECIAL SERVICE

The work of the members of the Grasselli Service Staff is to co-operate toward obtaining the best possible results from explosives, and insuring the greatest safety to your men. One of them will call at your request.

HERCULES POWDER CO.

WILMINGTON, DELAWARE

BRANCH OFFICES

Allentown, Pa.
Birmingham, Ala.
Buffalo, N. Y.
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Norristown, Pa
Pittsburg, Kan.
Pittsburgh, Pa.
Pottsville, Pa.
St. Louis, Mo.
Salt Lake City, Utah
San Francisco, Cal.
Wilkes-Barre, Pa.
Wilmington, Del.

Explosives and Blasting Supplies

HERCULES PERMISSIBLE EXPLOSIVES

Hercules Permissible Explosives are officially sanctioned by the United States Bureau of Mines for use in gaseous and dusty coal mines. The grades listed below have been developed to meet the varying conditions encountered in different districts.

Red H and Collier

Hercules Red H and Collier permissibles are of the ammonium nitrate type. They average from 1/3 to 1/2 more cartridges of a given size to a case than dynamites of the nitroglycerin and other types.

Red H C-L. F. is the strongest slow permissible and is the leading lump producer.

Red H 4 A-L. F. has medium strength and quickness, and is a good all-around powder where the coal is not too hard to shoot.

Red H 6 is a strong, dense, and fast permissible. It produces a high tonnage of coal per pound of powder, and is recommended where lump coal is not important.

Collier B is a high cartridge count permissible and where suited for the work, is very economical because of its low cost per cartridge. It runs more than 300 1¼"x8" cartridges per 100 lbs.

Other Hercules Permissibles

The list includes Bituminite 1, Bituminite 5, Collier 5 Special, Collier 11, Coal Powder B, Coal Special 3C.

A table giving the strength and quickness of all permissibles can be obtained from the Hercules Powder Co.

NON-PERMISSIBLE HIGH EXPLOSIVES

Hercules Special No. 1

Because of its high cartridge count and low cost per cartridge, Hercules Special No. 1 is more economical on work for which it is suited than ordinary dynamite. There are about 1/3 more cartridges of Special No. 1 in a box than there are of ordinary dynamite in the same size cartridges. Hercules Special No. 1 frequently replaces 40% dynamite, cartridge for cartridge, at a saving of approximately 25 percent. Special No. 1 is a "bulky" explosive, hence not as good as gelatin where a concentrated charge is desired, as in tunnel driving in hard tight rock. However, for quarrying, stripping, road building, and some underground work it is both effective and economical.

Hercules Gelatin

Hercules Gelatin is good for wet work, or for use where ventilation is poor. Its plasticity enables it to be loaded easily and effectively in holes having an upward slant, and the density and plasticity make it extremely well adapted for tight blasting in hard rock, such as tunnel driving, shaft sinking, etc. It is made in strengths from 30% to 75%.

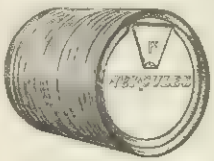
It is packed in standard cartridges, 50 lbs. to the case.

Hercules Extra Dynamite

Hercules Extra (Ammonia) Dynamite is a good explosive for most blasting purposes. It is less expensive than Gelatin or L. F. Nitroglycerin dynamites, but not as water resisting. It is made in strengths from 15% to 60%.

BLASTING POWDERS

"A" Blasting Powder is for use in dimension stone, slate and granite quarries.



"B" Blasting Powder is for use in non-gaseous coal mines, coal stripping, quarry, and construction work. It is manufactured in all sizes of (glazed) grains, from FFFF, about 1/16-inch diameter, to CCC, about ¾-inch diameter.

A special granulation called Herco is made for Hercoblasting. It is packed in kegs containing 25 lbs. net.

Write for Booklet Containing More Complete Information on Explosives

HERCULES BLASTING SUPPLIES

Hercules Blasting Machines

An apparatus for generating electric current used in firing electric blasting caps, squibs, and igniters. We recommend that no series circuit be used containing over 50 caps. Therefore, we sell no machine larger than Hercules 1-50 hole capacity, although this machine may fire more than this number.

The Hercules Midget Machine is rated to fire up to five electric blasting caps, connected in series, which allows ample power reserve.

Blasting Machine	Capacity
Midget—Pocket Size.....	5 Electric Blasting Caps
Hercules No. 2.....	10 Electric Blasting Caps
Hercules Blasting Machine..	50 Electric Blasting Caps

Electric Blasting Caps

These are used to detonate charges of high explosives by means of electricity. They are made in two strengths, No. 6 and No. 8. These are provided with insulated copper wires from 4 to 30 ft., or with iron wires from 4 to 8 ft. Packed 25 or 50 to the carton, 10 cartons to the case.

Electric Squibs

Hercules Electric Squibs are similar in appearance to Electric Blasting Caps, and are used to fire charges of Blasting Powder. The advantages of Electric Squibs are that more than one shot may be fired at one time, resulting in a saving of both powder and time. They are safer and may be placed in the center of the charge, resulting in complete combustion, giving quicker and stronger action with less smoke. Electric Squibs are made with 4 to 8 ft. iron wires and 4 to 30 ft. copper wires. Packed 25 and 50 to the carton, 10 cartons to the case.

Delay Action Electric Exploders

A combination Electric Igniter, Fuse and Blasting Cap, properly waterproofed, designed to fire charges in rotation by electricity, made in ten different delay periods. Furnished with copper wires, length 4 to 20 ft. Packed 25 and 50 to a carton, 10 cartons to the case.

Delay Electric Igniters

These are made in six delays and are used for firing charges of black powder in rotation. If desired, blasting caps may be crimped on the end of the igniter and used for rotation firing of high explosives. Made with wires 4 to 20 feet. Packed 50 to a carton, 10 cartons to a case.

Galvanometers

A reliable and compact instrument for testing electric blasting circuits, electric blasting caps, and for locating breaks, short circuits, faulty connections, etc. Weight 1 pound.

Rheostats

A small instrument offering the easiest and most effective means of testing the strength of a blasting machine without actually firing a series of electric blasting caps. This instrument gives a resistance equal to from 5 to 100 electric blasting caps, with 30 ft. copper wires.

Leading Wire

Hercules Leading Wire is an insulated copper wire (No. 14 B. & S. gauge) used for connecting electric blasting caps to the blasting machine. It is furnished in coils from 200 ft. to 500 ft.

Connecting Wires

Hercules Connecting Wire is used to join the wires of electric blasting caps. It is a high grade insulated copper wire (No. 20 B. & S. gauge), and is put up in one and two pound spools.

Blasting Caps

Blasting Caps are used to detonate charges of high explosives. As the efficiency of any high explosive depends on the initial shot, we do not recommend caps smaller than Hercules No. 6.

Standard sizes Nos. 6 and 8. Packed 100 in a box, 5 to 50 boxes in a case.

Miners' Squibs

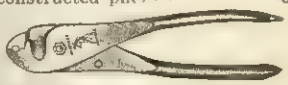
Squibs are used for firing charges of blasting Powder. "Artificial straw" and "Rocket" Squibs burn with a flame. "Chinese" or "Gas" Squibs burn with an ember, no flame. Packed 100 to the box, 100 boxes in a case.

Safety Fuse

We are not manufacturers of Safety Fuse. We purchase and sell the various standard brands of Safety Fuse as manufactured in this country. The manufacturers of Safety Fuse give an estimated burning speed for every brand. Fuse is packed in coils of 100 ft. Cases contain from 5 to 60 coils.

Cap Crimpers

Hercules Combined Fuse Cutter and Cap Crimpers are especially constructed pliers made for the purpose of fastening blasting caps securely to fuse. They are equipped with a special fuse cutter, and one handle is made round and pointed for punching holes in sticks of dynamite in which the detonators are placed. These crimpers are nickel-plated, packed in cartons, 12 to the box.



Blasting Paper

Hercules Blasting Paper is a tough moisture resisting paper used for making cartridges of blasting powder. It comes in rolls 9 and 12 inches wide. These weigh respectively 4½ and 6 lbs.

Tamping Bags

Hercules Tamping Bags are made of heavy water resisting paper. They are very convenient and inexpensive. Made in sizes from 1"x8" to 2"x18". Packed in bales containing 5,000.

Other Blasting Supplies

Cordeau Bickford Detonating Fuse; Storage Magazines; Thawing Kettles.

Consult with the Hercules Service Division on All Your Blasting Problems. For Further Detailed Information Write for Our Book, "Hercules Products".

ILLINOIS POWDER MFG. COMPANY

General Offices
1652 Pierce Building, ST. LOUIS
Works: GRAFTON, ILLINOIS

Branch Offices

Steger Bldg., 28 E. Jackson Bl. CHICAGO
1419 Central Bank Bldg. MEMPHIS, TENN.
309-310 Victor Bldg. KANSAS CITY, MO.
And Many Other Distributing Points

Makers of

"Black Diamond Permissibles"

Manufacturers Also of

"GOLD MEDAL" DYNAMITE AND BLASTING SUPPLIES——BLASTING POWDER

"BLACK DIAMOND" No. 2-A

A Nitro-Glycerin Base Permissible of medium velocity, best adapted to work where a fairly active powder is required. Especially recommended where vein of coal is firm or hard.

Put up usually in 50 pound boxes of 1¼x8 inch sticks, 135 to 140 per box. Can also be furnished in larger sizes if desired.

Not low freezing.

"BLACK DIAMOND" No. 3-A

Slower than No. 2-A, but also a nitro-glycerin base powder. Recommended where a large percentage of lump coal is wanted.

Put up in 1¼x8 inch sticks in 50 pound boxes containing 135 to 140 sticks per box. Larger sizes furnished if desired.

Not low freezing.

"BLACK DIAMOND" No. 5

A high grade ammonia base permissible powder, very slow acting, and especially recommended where lump coal is wanted.

Made in 1¼x8 inch sticks usually, put up in 50 pound boxes containing 135 to 140 sticks per box. Larger sizes furnished if wanted.

Not low freezing.

"BLACK DIAMOND" No. 6-LF

A nitro-glycerin base permissible much slower than No. 3-A and especially recommended where a large per cent. of lump coal is desired. Being low

freezing, it can be used without thrawing attention, at much lower temperatures than either No. 2-A or No. 3-A.

Put up in 1¼x8 inch sticks, 135 to 140 sticks to the 50 pound box. Larger sizes furnished if desired.

"BLACK DIAMOND" No. 7

A high grade ammonia base powder of medium velocity, considerably quicker than No. 5, and best used where a fairly active powder is needed, in hard or firm veins. Also adapted to trimming and blasting out the "bone" in coal mining.

Put up in 1¼x8 inch sticks, 135 to 140 to the 50 pound box. Larger sizes if desired.

(This grade is also low freezing.)

Special "I. P. Mfg. Co." Sticks

The Illinois Powder Mfg. Co. originated a size of 1¾x6 inch sticks, each weighing one-half pound, and these have become very popular for certain uses. Packed usually in 50 pound boxes of 100 sticks each. All of the Company's brands may be had in this special size if ordered thus. Shipments are made of the 1¼x8 inch size, however, unless orders call for the newer size. Care should be taken to specify size in order to prevent delays or errors in filling requirements. Twenty-five pound boxes of the 1¾x6 inch size, as well as other sizes, can be furnished where required at a small additional charge.

Blasting Supplies

The Illinois Powder Mfg. Co. carries a complete stock of Blasting Machines, Blasting Caps, Safety Fuse, Cordeau-Bickford Detonating Fuse, Electric Blasting Caps, Leading and Connecting Wire, Thawing Kettles, and all other Blasting Supplies. Every order is given careful and prompt attention. Your requirements are solicited.

Storage

All explosives should be stored in dry, well ventilated magazines. This is especially required in the case of Permissible Powders of Ammonia Base such as Black Diamond No. 5 and No. 7. This class of explosives is quickly affected by moisture and rendered less effective thereby.

For complete detonation of all Permissibles use a No. 6 Blasting Cap or No. 6 Electric Blasting Cap.

ORVIS C. HOFFMAN LEON H. HOFFMAN

HOFFMAN BROS.

1 Eberhart Building, PUNXSUTAWNEY, PA.

Contractors, Diamond Core Drilling

Our Specialty—Testing Bituminous Coal Lands

Success or Failure—Which?

When opening new coal mines or developing additional territory it is good business on the part of the operator to secure all available information as to—

1. **Extent** of workable seams.
2. **Location** of barren formations.
3. **Thickness** or persistence of seams.
4. **Quality** of coal, showing binders, partings, sulphur, etc.
5. **Roof** and **Bottom** conditions.
6. **Intervals** between seams.
7. **Anticlinals** and **Dip** of seams.
8. **Faulty Conditions** determined.

Core From a 1200 Ft. Hole.

With This Information in Hand

Your engineering problems from the operating standpoint are practically solved.

The doubt as to whether it will pay to purchase the property or install an expensive plant has been eliminated.

Our **diamond drill records** together with the **full cores of the coal seams** enable you to judge for yourself beforehand and, if you invest, insures you against a possible failure through a mistaken judgment as to property values.

One [illegible] Diamond Core Drills

Efficient Service Means Much

More than twenty years of experience in testing bituminous coal lands throughout the different fields where bituminous coal is mined has taught us that

> Only first-class equipments should be used and these in the hands of thoroughly competent and highly experienced drill runners.

We have twenty-five (25) completely equipped diamond core drills and a large organization of expert diamond drillers.

Our drills are of the most approved type and adapted for drilling 3" bore holes, furnishing cores of 2¼" diameter to a depth of 1,000 feet or more, if necessary, while our larger drills have a capacity of 3,000 feet. We have the full advantages of the very best of machine shop work.

Our drillers are experienced and trustworthy, most of whom have been with us for many years and during that time, by drilling in many different fields and under the most difficult and trying conditions, have developed the skill and ability, which is absolutely necessary in order to do work speedily and accurately.

One of Our Special Large Equipments. Adapted for Drilling 3,000 Ft.

Many a property has been condemned through incompetence and carelessness on the part of the drillers. The greatest of care must always be exercised while drilling and removing coal cores.

We guarantee satisfactory coal cores.

All work is done in the strictest of confidence.

We have **an established reputation** among mining engineers and coal operators, who know us favorably through the development of many different properties during the past. These companies depend upon us doing their diamond drill work from time to time.

Drilling Angle Holes.

Our prices are always very reasonable, consistent with the best of work.

May We Quote You On Your Next Contract?

PENNSYLVANIA DRILLING CO.

PITTSBURGH, PA.

Office and Shops, 1808-1818 West Carson Street

DRILLING CONTRACTORS

Products

Diamond Core Drilling.
Hollow Rod Drilling.
Big Holes for Ventilation.
Foundation Testing, Water Wells, etc.
DIAMOND CORE DRILLS for all classes of work to 3,000 feet in depth.

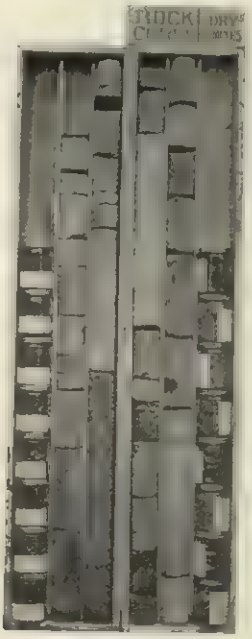
We have drilled for coal from Canada to Mexico. We have been looking into the earth for 20 years. May we look into the earth for you?

Equipment

80 Diamond Core Drills.
Drills suitable for taking up in the mountains.
Drills for work inside the mines. We can drill at any angle from straight up to straight down, drilling from one seam to another.
Drills for shallow holes—testing stripping coal and cover over it.

If you do not need the CORE we can use the HOLLOW ROD system, which is a very much CHEAPER way to ascertain depth and thickness of seam.

If you are going to build reservoir, tipple, bridge or power plant we make a business of FOUNDATION TESTING and work of that kind.



Illustrating method of showing the result of testing for proposed foundations for reservoirs, dams, bridges and other heavy structures

We also use churn drills for water wells or for making holes for electric wires or for pumping water out of the mines.

We have hundreds of well satisfied customers for whom we have drilled throughout the coal fields of the UNITED STATES, ALBERTA, BRITISH COLUMBIA and MEXICO, and to whom we can refer.

When in PITTSBURGH we invite you to visit our office and shop at 1808 to 1818 West Carson street.

Pennsylvania - West Virginia Drilling Co.

FORMERLY HUGHES & SAWYER

LUTHER J. HUGHES, Manager
Indiana, Pa.
Bell Phone 104-W

H. L. GREGG, President
Patton, Pa.
Bell Phone 56-J

FRANK S. GREGG, Secretary
Patton, Pa.

DIAMOND CORE DRILLING CONTRACTORS

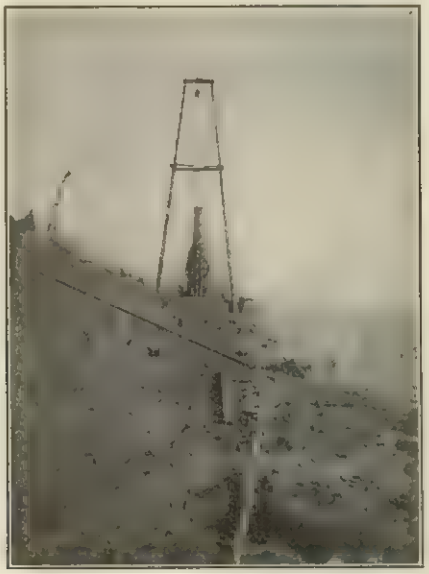
Testing Bituminous and Clay Lands Our Specialty

THE OBJECT OF TESTING COAL PROPERTIES by the Diamond Core Drill process is to secure the following information:

1—THICKNESS of Coal Bed.
2—ACREAGE of Workable Bed.
3—QUALITY of the Coal.
4—NATURE and kind of Roof and Bottom.
5—INTERVAL between Beds.

THIS COMPANY IS COMPOSED OF TWO EXPERT DIAMOND DRILLERS and one Graduate Mining Engineer. This organization assures you that no job is too large or difficult for us to undertake nor too small to receive our closest attention.

The majority of our equipment is new and always kept in the best of condition and, therefore, we can guarantee speedy and satisfactory work.



Drilling on West Virginia Mountain

THE DIAMOND CORE DRILLING MACHINE produces a section 2¼" in diameter of all rock and COAL strata penetrated. Not only can a visual inspection be made of the different strata, including the COAL BEDS but the COAL CORES can be used for determining analysis.

RELIABILITY is the foundation upon which we have built our business. The absolute accuracy of the method, the efficiency of the drilling outfits, the responsibility of the CONTRACTING COMPANY together with the ability and skill of the drill operators should be given careful consideration. Our list of SATISFIED CUSTOMERS, which can be had upon request, will certify to our RELIABILITY.

We also SPECIALIZE in drilling for Limestone, Ore, Cement Rock and all Minerals of which a core is required and are equipped for drilling holes for grouting purposes, testing for dam, reservoir and building sites.

OUR PRICES ARE REASONABLE and all work done in the strictest of confidence. Upon receipt of a telegram, a post card or a telephone call our representative will call to see you.

One Contract Completed Will Assure Us of Your Future Drilling.

Your Inquiries Solicited.

Punxsutawney Drilling & Contracting Co.

SWARTZ BUILDING, PUNXSUTAWNEY, PA.

Mrs. Hans Olson, President

B. D. Hampson, Secretary & Treasurer

Testing mineral lands with the diamond drill is now acknowledged to be the only satisfactory way. In this advanced age of keen competition it would be considered poor business judgment for any individual or corporation to purchase a property supposed to be rich in minerals without being absolutely certain as to whether it is or not. The only way to find out is to have the property tested by the diamond drill. By this method you secure a core of the entire distance drilled. Accurate measurements of all strata passed through are furnished, and a complete core for chemical analysis is the final result.

Testing Coal Land Is Our Business

We are the pioneers in the diamond drilling business in Pennsylvania. We have gone through all phases of the business, and believe we have gleaned a pretty thorough knowledge of how to do the work right in our thirty-three years' experience.

SO CONFIDENT ARE WE OF OUR ABILITY THAT WE GUARANTEE SATISFACTION.

Selecting a man to test your mineral lands is just as important as selecting your lawyer or your doctor—you want the best. You cannot afford to take a chance on inexperienced or incompetent men in either case. Our ability is unquestioned and our prices for the work are reasonable. We have plenty of drills and a force of skilled workmen at all times and can take care of your work on short notice. With the best machinery on the market and a force of experienced, reliable workmen, most of whom have been with us for years, we have an organinzation that can produce results.

Our best advertisement has been the satisfactory service we have rendered some of the largest concerns in the United States, any of whom you are at liberty to write concerning our reliability. For your information and convenience we mention a few of these as follows:

PENNSYLVANIA

Berwind-White Coal Mining Co.....Philadelphia, Pa.
Rochester & Pittsburgh Coal & Iron Co . ....Indiana, Pa.
Buffalo & Susquehanna Coal Mining Co.....Dubois, Pa.
Northwestern Mining & Exchange Co.....Dubois, Pa.
Hillman Coal & Coke Co..1st Ntl. Bk. Bldg., Pittsburgh, Pa.
Keystone Coal & Coke Co.....Greensburg, Pa.
H. N. Eavenson.....Union Arcade, Pittsburgh, Pa.
J. S. Sillyman & Co., Mining Engineers.....Altoona, Pa.
John F. Torrence.....Connellsville, Pa.
E. W. Eisler.....Butler, Pa.
John M. Rayburn, Civil and Mining Engineer..... ... .House Bldg., Pittsburgh,, Pa.
Allegheny River Mining Co... ....Kittanning, Pa.

OHIO

American Sheet & Tinplate Co.....Pittsburgh, Pa.
George M. Jones Co.....Toledo, O.
W. H. Warner & Co.....Cleveland, O.

ILLINOIS

Inland Steel Co.....Chicago, Ill.

WEST VIRGINIA

Consolidation Coal Co.....Fairmont, W. Va.
Davis Coal & Coke Co.....Cumberland, Md.
Elkins Coal & Coke Co.....Morgantown, W. Va.
New River & Pocahontas Consolidated Coal Co. Charleston, W. Va.
Faraday Coal & Coke Co.....Gary, W. Va.
New River Collieries Co.....Eccles, W. Va.

KENTUCKY

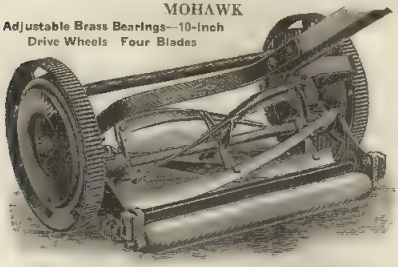
West Kentucky Coal Co.....Sturgis, Ky.

We would be pleased to submit prices on your next contract for drilling. A telegram, postal card or telephone call will bring our representative to you.

LAWN MOWERS

MOHAWK

Adjustable Brass Bearings—10-inch Drive Wheels Four Blades



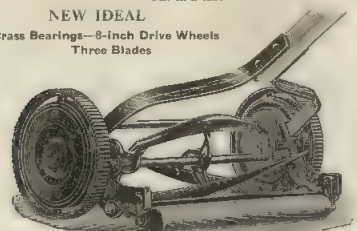
10-inch drive wheels with spoked rims, four revolving blades, 6 inches [illegible] bearings, high grade steel knives, continuous shearing adjustable cutter bar, extra painted, hardwood handles.

Nos.	114	116	118
Cut, inches	14	16	18
Weight, pounds	48	50	52
Each	$18 00	19 00	20 00

One in a case

NEW IDEAL

Brass Bearings—8-inch Drive Wheels Three Blades



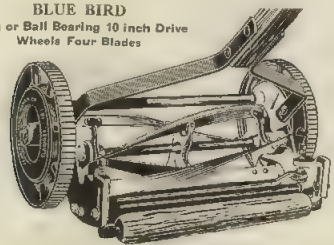
8-inch drive wheels with ribbed rims, three revolving blades, 5-inch reel, improved cutter bar, brass bearings, double geared, hardwood handles wrought iron handle braces, extra painted.

Nos.	314	316
Cut, inches	14	16
Weight, pounds	42	44
Each	$11.80	12 40

One in a case

BLUE BIRD

Plain or Ball Bearing 10 inch Drive Wheels Four Blades

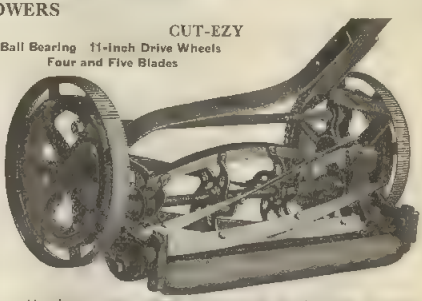


10-inch Drive wheels, compulsory operating hardened steel pawl ratchets, four crucible steel oil-tempered blades, 6-inch reel, extra tie bar. Geared on both sides. Raised edge bottom knife, self-sharpening, screwed on Finished in blue and gold. Plain or ball bearings. Easy adjustment

Nos.	814	816	818
Cut, inches	14	16	18
Weight, pounds	59	60	65
Ball Bearing	Each, $18 00	19.00	20 00
Plain Bearing	Each, 16 00	17 00	

CUT-EZY

Ball Bearing 11-inch Drive Wheels Four and Five Blades

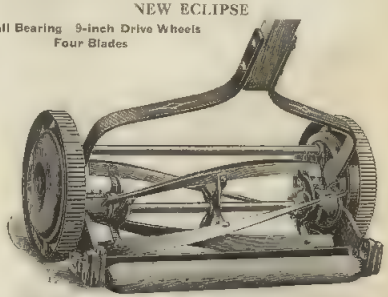


11-inch [illegible] revolving blades, continuous shearing, [illegible] reel; 6-inch [illegible] positive [illegible] geared on both sides. All adjusting screws are [illegible] Ball bearings protected by dust-proof caps. Extra [illegible]

	4 Blades			5 Blades		
Nos.	416	418	420	516	518	520
Cut, inches	16	18	20	16	18	20
Weight, pounds	40	43	46	50	56	58
Each	$23 20	24 60	28 00	$24 60	26 00	27 40

NEW ECLIPSE

Ball Bearing 9-inch Drive Wheels Four Blades



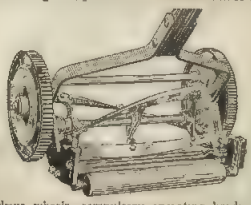
9-inch [illegible] wheels, four revolving blades, running in ball-bearing journals [illegible] cutter bar, continuous shearing An excellent ball-bearing Mower of a medium price

Nos.	214	216	218
Cut, inches	14	16	18
Weight, pounds	40	44	48
Each	$18 00	19 00	20 00

One in a case

VICTORY

Plain Bearings– 8½-inch Drive Wheels Three Blades



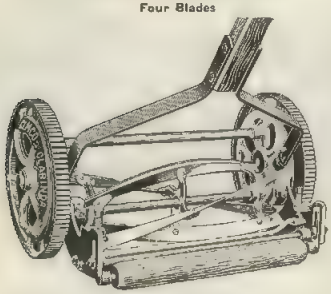
8½-inch drive wheels, compulsory operating hardened steel pawl ratchet. Three hardened steel blades, 6-inch reel, extra tie bar. Geared on both sides. Raised edge bottom knife, self-sharpening, screwed on Gold finished body, green wheels, plain bearings.

No. 914—14-inch cut Weight 54 pounds..... Each, $13 00

LAWN MOWERS AND PARTS

LAWN KING LAWN MOWERS

Ball Bearing 11-inch Drive Wheels
Four Blades



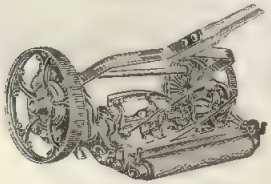
A powerful, light-weight, easy running mower that is especially adapted to the ordinary average sized lawn. The 12-inch high wheels carry it over irregularities and cuts evenly. Has complete ball bearing operating hardened steel pawl, 6-inch reel with four crucible steel blades and extra tie bar. The bottom knife is crucible steel oil tempered, raised edge, self-sharpening, screwed in. Finish glossy bright red wheels with gold trimmings and gold frame.

Nos.	716	718	720
Cut, inches	16	18	20
Weight, boxes, lbs.	42	45	52
Each	$23 00	24.00	25 00

One in a case

PENNSYLVANIA JUNIOR LAWN MOWERS

Double-Geared Ball Bearing—10-inch Drive Wheels
Five Blades



10-inch drive wheels, open spokes, extra long wheel base; rides smoothly over uneven ground. Six-inch reel with five extra wide blades of tool steel, oil hardened and water tempered. Bottom knife has raised edge of tempered crucible tool steel. Self-sharpening. Adjustable roller. Dustproof cups. Finished in green and red with gold stripes. Varnished hardwood handle with bolted iron braces on cross bar. Height of cut ¾ to 1⅝ inches. Will cut grass standing 6 inches high.

Nos.	615	617	619	621
Cut, inches	15	17	19	21
Weight boxes, lbs.	71	74	77	80
Each	$42 70	48 40	54 00	60 00

One in a case

LAWN MOWER OIL

Lubricates, Polishes and Prevents Rust

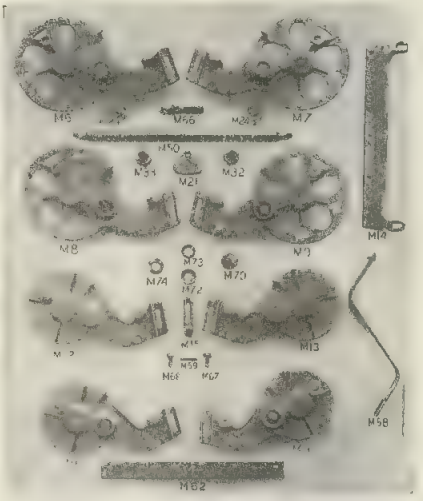
A clear oil free from solids, acids or animal grease, will not gum up or clog the machinery, no matter how freely it is used. Especially suited for use in lawn mowers, sewing machines, bicycles, motorcycles, magnetos, guns and other delicate machine parts.

No. 8—½ Pint cans with spouts. Per Dozen, $3.00

One dozen in a carton. Weight 7¼ lbs.

LAWN MOWER PARTS

Lawn King



In ordering parts, give name, size and style of machine, as well as all letters and all numbers appearing on part wanted. You may determine the style of your mower by examining the side plates or disks.

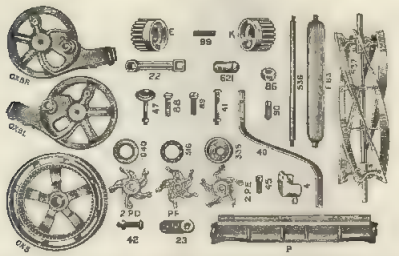
Prices are manufacturer's List, subject to special discount and are F. O. B. Factory.

Nos.	Article	Each
M-6	Right hand casing, plain bearing	$3 00
M-7	Left hand casing, plain bearing	3 00
M-8	Right hand casing, ball bearing	3 50
M-9	Left hand casing, ball bearing	3 50
M-16	Bed Knife Bar 16 inch	1.00
M-18	Bed Knife Bar 18 inch	2.50
M-32	Right hand Pinion	.60
M-33	Left hand Pinion	.60
M-24	Plain Bearings, bottom half of bearing	.50
M-24½	Plain Bearings, top half of bearing	.30
M-15	Roller Slide	.30
M-21	Dust Cap	30
M-51	Shrub Guard Steel, 16 inch cut	1 40
M-52	Shrub Guard Steel, 18 inch cut	1.80
M-55	Back Guard, 16 inch	1 20
M-56	Back Guard, 18 inch	1 60
M-59	Handle Irons for 16 inch cut	1 40
M-60	Handle Irons for 18 inch cut	1.80
M-63	Bed Knife Bar, knife 16 inch	2.30
M-64	Bed Knife Bar, knife, 18 inch	2 60
M-66	Adjusting Screw Washers and Nut Complete	1.00
M-67	Adjusting screw for plain bearing	.30
M-68	Eccentric Screw for bed bar	.30
M-69	Ratchet Bar	.30
M-70	Stud Cone for reel shaft ball bearing	.90
M-71	Adjustment Cone for reel shaft	1 20
M-72	Cup Cone for casings M-8 and M-9	80
M-75	Ball Retainer for cup cone. Balls and Retainers complete	.80
M-74	Washers for wheels M-26, 27, 28, 29 and 30	.30
M-90	16 Inch, solid reel, ball bearing	8.00
M-91	18 Inch, solid reel, ball bearing	8.50

LAWN MOWER PARTS

In ordering parts give name, size and style of machine, as well as all letters, and all numbers appearing on part wanted. You may determine the style of your mower by examining the side plates or disks. Prices are manufacturer's list subject to special discount and are F. O. B. FACTORY.

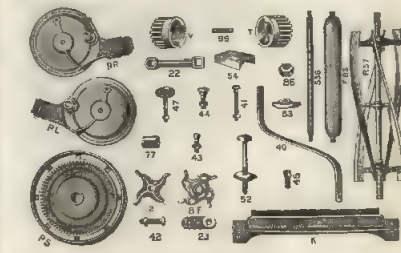
CUT-EZY



Nos		Each
O X B R	Right Hand Disk	$2 50
O X B L	Left Hand Disk	2.50
O X S	Drive Wheels, alike	2.00
E	Right Pinion, ⅝	.40
K	Left Pinion, ⅝	.40
99	Steel Pawls alike	.10
436	Reel Shaft	60
437	Reel complete	4.00
2 P D	Right End Spider	.70
2 P E	Left End Spider	.70
P F	Center Spider	.50
536	Cross Rod or Tree Guard	.70
P 14	Cutter Bar	1.40
P 15	Cutter Bar	1.60
P 18	Cutter Bar	1.80
P 20	Cutter Bar	2.00
F 83	Wooden Roller, any length	.30
22	Wrench	.20
23	Roller Brackets, alike	.20
39	Wood Handle, complete Handle Tongue Cross Handle	.70 .35
40	Handle Irons, Per Pair	.50
41	Bolt for fastening Irons to Wood Handle, 2¼x¼	.10
42	Roller Bracket Bolt, 1⅛x¼	.10

Nos.		Each
45	Set Screw to fasten Spider to Reel Shaft, ⅝x⅜	$0 10
47	Bolt and Washer for Holding Wheel on, 2½x¼	.15
4	Pinion Cap	.20
49	Pinion Cap Bolt, ⅝x⅜	.10
52	Machine Bolt to fasten Cross Handle to Tongue, 3½x⅜	.10
53	Handle Cap	.10
54	Saddle for Cross Handle	.20
86	Nut for fastening Cross Rod to Disks, ⅜ Hex.	.10
88	Cutter Bar Cap Screws, 1x¾	.10
89	Screws for adjusting Cutter Bar, 1x⅜	.10
90	Set Screw for adjusting Cone, each, ⅝x⅜ Cone Point	.10
335	Ball Cups, both alike	.40
	Steel Balls, Per Set of 16	.50
516	Ball Retainers, alike	.20
621	Adjustable Cones for Ball Bearings	.40
1040	Dust Cap for Cup and Balls	.30

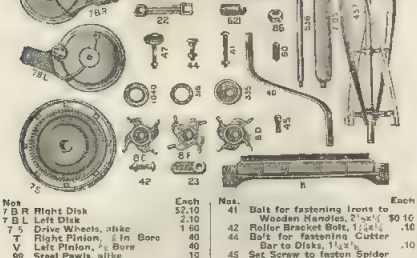
MOHAWK



Nos.		Each
R R	Right Disk	$2 00
R L	Left Disk	2 00
P S	Drive Wheels, alike	1 80
T	Right Pinion, ⅝ in Bore	.40
V	Left Pinion, ⅝ in. Bore	.40
99	Steel Pawls, alike	.10
R 36	Reel Shafts	.80
R 37	Reel complete, 4 blade	2 40
12	End Spiders, alike	.40
8 F	Center Spider	.40
536	Cross Rod or Tree Guard	.70
K 10	Cutter Bar	.90
K 12	Cutter Bar	1 10
K 14	Cutter Bar	1 30
K 16	Cutter Bar	1 50
K 18	Cutter Bar	1 70
K 20	Cutter Bar	1 90
F 83	Wooden Roller	.30
22	Wrench	.20
23	Roller Brackets, alike	.20
39	Wood Handle, complete Handle Tongue Cross Handle	1 00 .60 .40

Nos.		Each
40	Handle Irons, Per Pair	$0 30 .60
41	Bolt for fastening Irons to Wooden Handle, 2¼x¼	.10
42	Roller Bracket Bolt, 1⅛x¼	.10
43	Reel Box Adjusting Screw, ⅝x⅜, with lock nut	.10
44	Bolt for fastening Cutter Bar to Disks, 1¼x⅜	.10
45	Set Screw for fastening Spider to Reel Shaft, ⅝x⅜	.10
47	Bolt and Washer for holding Wheel on, 2½x¼	.15
52	Bolt to fasten Cross Handle to Handle Tongue, 3 x ⅜	.20
53	Washer Cap for Cross Handle	.10
54	Saddle for Cross Handle	.20
86	Nuts to fasten Cross Rod to Disks, ⅜	.10
77	Brass Bushings, alike	.25

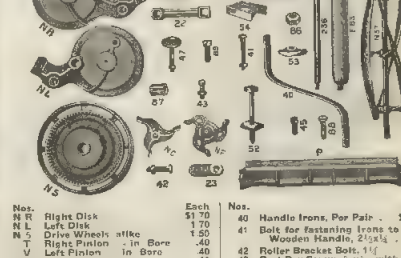
NEW ECLIPSE



Nos		Each
7 B R	Right Disk	$2.10
7 B L	Left Disk	2.10
7 S	Drive Wheels, alike	1 60
T	Right Pinion, ⅝ in Bore	40
V	Left Pinion, ⅝ Bore	40
99	Steel Pawls, alike	10
436	Reel Shaft	80
437	Reel complete	3 00
8D	Right End Spider	60
8E	Left End Spider	.40
9F	Center Spider	.40
536	Cross Rod or Tree Guard	.70
K 12	Cutter Bar	1 10
K 14	Cutter Bar	1 30
K 16	Cutter Bar	1 50
K 18	Cutter Bar	1 70
K 20	Cutter Bar	1 90
F 83	Wooden Roller	.30
22	Wrench	.20
23	Roller Brackets, alike	.20
39	Wooden Handle, complete Handle Tongue Cross Handle	1 00 .60 .30
40	Handle Irons, Per Pair	.60

Nos.		Each
41	Bolt for fastening Irons to Wooden Handles, 2¼x¼	$0 10
42	Roller Bracket Bolt, 1⅛x¼	.10
44	Bolt for fastening Cutter Bar to Disks, 1¼x⅜	.10
45	Set Screw to fasten Spider to Reel Shafts, ⅝x⅜	10
47	Bolt and Washer for holding Wheel on, 2½x¼	.15
52	Bolt to fasten Cross Handle to Handle Tongue, 3½x⅜	.20
53	Washer Cap for Cross Handle	.10
54	Saddle for Cross Handle	.20
86	Nut for fastening Cross Rod to Disks, ⅜	.10
80	Set Screw for adjusting Cone, ⅝x⅜ Cone Point	.10
335	Ball Cups, alike	.40
	Steel Balls, Per Set of 16	.50
516	Ball Retainers, alike	.20
621	Adjustable Cone for Ball or left end of reel shaft	.40
1040	Dust Cap for Cup and Ball	.30

NEW IDEAL



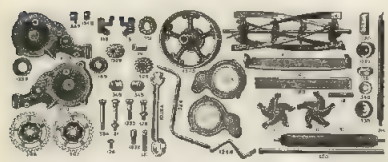
Nos.		Each
N R	Right Disk	$1 70
N L	Left Disk	1 70
N S	Drive Wheels alike	1 50
T	Right Pinion in Bore	.40
V	Left Pinion in Bore	.40
99	Steel Pawls, alike	.10
N 36	Reel Shaft	60
N 37	Reel complete, 3 Blade	1 85
N 47	Reel complete, 4 Blade	2 40
N C	End Spider	30
N F	Center Spider	30
236	Cross Rod or Tree Guard	
P 10	Cutter Bar	1 00
P 12	Cutter Bar	1 20
P 14	Cutter Bar	1 40
P 16	Cutter Bar	1 60
P 18	Cutter Bar	1 80
F 83	Wooden Roller	.30
22	Wrench	.20
23	Roller Brackets, alike	.20
39	Wood Handle, complete Handle Tongue Cross Handle	1 00 .60 .30

Nos.		Each
40	Handle Irons, Per Pair	$0.60
41	Bolt for fastening Irons to Wooden Handle, 2¼x¼	.05
42	Roller Bracket Bolt, 1⅛	.10
43	Reel Box Screw, ⅝x⅜, with lock nut	.10
45	Set Screw to fasten Spider to Reel Shaft, ⅝x⅜	.10
47	Bolt and Washer for holding Wheel on, 2½x¼	.15
52	Bolt to fasten Cross Handle to Handle Tongue, 3½x¼	.20
53	Washer Cap for Cross Handle	.10
54	Saddle for Cross Handle	.20
86	Nuts to fasten Cross Rod to Disks, ⅜	.10
87	Brass Bushings, alike	.20
88	Cap Screw for end of Cutter Bar, ¾x⅜	.10
89	Screw for adjusting Cutter Bar, 1x⅜	.10

LAWN MOWER PARTS AND GRASS CATCHERS

LAWN MOWER PARTS

Pennsylvania Junior



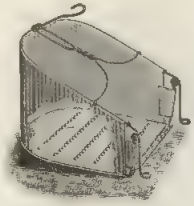
Always give name of machine and width of cut with numbers and names of parts wanted. The size is stamped on lower bar to which knife is attached. Where possible the number is cast in the part.

Prices quoted are Manufacturer's list subject to Special Discount and are F. O. B. Factory.

Nos.	ARTICLE	Each
B 1301	Left Hand Side Plate, with Cup	$3.60
B 1302	Right Hand Side Plate, with Cup	3.60
1303	Left Hand Shield	1.50
1304	Right Hand Shield	1.50
1305	Driving Wheels, both alike, each	2.50
1306	Left Hand Master Gear, 1¼ inch Hole	1.40
1307	Right Hand Master Gear, 1¼ inch Hole	1.40
1308	Intermediate Gear, both alike, ⅝ inch Hole, 20 cogs, each	.50
1309	Pinion, both alike, ⅝ inch Hole, 13 cogs, each	.50
1311	Bushing for Intermediate Gear, each	.40
1312	Cast Back for Stationary Knife, 15 inch	1.75
	Cast Back for Stationary Knife, 17 inch	2.00
	Cast Back for Stationary Knife, 19 inch	2.25
	Cast Back for Stationary Knife, 21 inch	2.50
1313	Steel Stationary Blade, 15 inch	1.25
	Steel Stationary Blade, 17 inch	1.35
	Steel Stationary Blade, 19 inch	1.50
	Steel Stationary Blade, 21 inch	1.75
1314	Shaft for Frame, 15 inch (14⅞ inches long)	.80
	Shaft for Frame, 17 inch (16⅞ inches long)	1.00
	Shaft for Frame, 19 inch (18⅞ inches long)	1.10
	Shaft for Frame, 21 inch (20⅞ inches long)	1.12
1315	Cylinder, complete, 5 Knives, 15 inch	8.00
	Cylinder, complete, 6 Knives, 17 inch	9.00
	Cylinder, complete, 6 Knives, 19 inch	10.00
	Cylinder, complete, 6 Knives, 21 inch	11 00
1316	Left Hand Cylinder Head	2.00
1317	Right Hand Cylinder Head	2.00
1318	Ring for Cylinder	.90
1319	Spiral Knife for Cylinder, 15 inch	1 00
	Spiral Knife for Cylinder, 17 inch	1 10
	Spiral Knife for Cylinder 19 inch	1 20
	Spiral Knife for Cylinder 21 inch	1 30
1320	Shaft for Cylinder, 15 inch 12⅞ inches long	.60
	Shaft for Cylinder 17 inch 16⅞ inches long	.70
	Shaft for Cylinder 19 inch 21 inches long	.80
	Shaft for Cylinder 21 inch 23 inches long	.90
1321	Wood Roller, 15 inch 13½ inches long	.90
	Wood Roller 17 inch 15½ inches long	1.00
	Wood Roller 19 inch (17½ inches long)	1.10
	Wood Roller, 21 inch (19½ inches long)	1.20
118	Left Hand Roller Bracket	.30
119	Right Hand Roller Bracket	.30
1324	Handle Brace, 15 inch, each	.50
	Handle Brace, 17 inch, each	.60
	Handle Brace, 19 inch, each	.70
	Handle Brace, 21 inch, each	.80
1325	Wood Handle, with Steel Clamp	1.50
1326	Steel Bawl	.10
23	Steel Pin for Pinion, ¼x⅝ inch	.05
127	Set Screw for Adjusting Cast Back, ⅜x1¼ inch	.05
1332	Set Screw for Fastening Cylinder Head to Shaft, square head, ⅜x⅝ inch	.05
126	Machine Screw for Stationary Knife, round head, ¼x¾ inch	.05
1334	Machine Screw for Wheel Bearing, ¼x⅞ inch	.10
1335	Machine Screw for Bushing on Intermediate Gear, ¼x1⅛ inch	.05
128	Bolt for Roller Bracket and Gear Box, ⅜x1½ inch	.05
1336½	Bolt for Cast Back, ⅜x1⅝ inch	.05
131	Bolt for Handle Brace ¼x2¾	.06
1338	Washer for Wheel Bearing, Round Hole	.05
1339	Washer for Cast Back	.05
1340	Washer for Roller Bracket and Wood Handle, ⅜x⅞ inch	.05
136	Nut for End of Frame Shafts, Hexagon	.05
1036A	Wrench	.40
1344	Sharpening Crank	.20
1345	Left Hand Cone	.60
1346	Right Hand Cone	.60
1347	Eccentric Screw for Adjusting Cone ¼x⅝ inch	.20
1348	Set Screw for Cone, both alike each, ¼x⅜ inch	.10
1349	Ball Cup without balls	.40
1350	Dust Cap for Ball Cup	.20
1351	One Set Balls with Retainer	.40
137	Roller Pins	.15
1353	Rivets for Cylinder Knives, ⅝x13-64 inch	.05
	Handle Clamps, Steel, each	.20
	Bolt for Handle Clamps, ¼x⅞ inch	.05

GRASS CATCHERS

Easy-Emptying

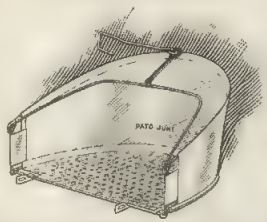


Galvanized non-slipping bottom with raised bead and flange to insure rigidity, galvanized steel wire frame and short handle. Round back, heavy duck sides firmly fast ned to bottom by three folds of sheet steel, preventing possible ripping of canvas long bottom edge. Adjustable for 16 to 20 inch mowers.

No. 306—Depth 20 inches, width 20 inches. Weight per dozen 50 pounds. . . . . Per Dozen, $24 00

Half dozen nested in fibre box

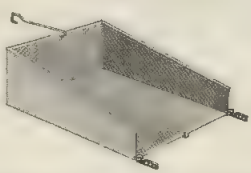
Galvanized Non-Skid Bottom



No. 151 Perfection, 13 inches deep. Made of fine quality white canvas heavy galvanized bottom heavy wire frame adjustable steel hooks will fit any mower made, is always in position to receive catcher, equipped with Perfection Handle, and Non Skid, galvanized bottom, adjustable to mowers 12 to 20 inches. Shipping weight, 7 dozen 4 pounds. Per Dozen $18 00

No. 156—Same as No 151, except will fit mowers 16 to 20 inches. . . . . Per Dozen, $20 00

All Canvas with Wire Frame



No. 110—Perfection, 9 inches deep. Made of fine quality white canvas heavy galvanized wire frame adjustable steel hooks; will fit any mower made and always in position to receive catcher, for 12 to 16-inch mowers. Shipping weight per dozen, 20 pounds. Per Dozen, $12 50

No. 115—Same as No. 110, except will fit mowers 14 to 20 inches. Per Dozen, $14 00

Howells Mining Drill Co.

PLYMOUTH, PA.

ESTABLISHED 1878

Manufacturers of Mining Drills

TRADE MARK "REG. U.S. PAT. OFF."

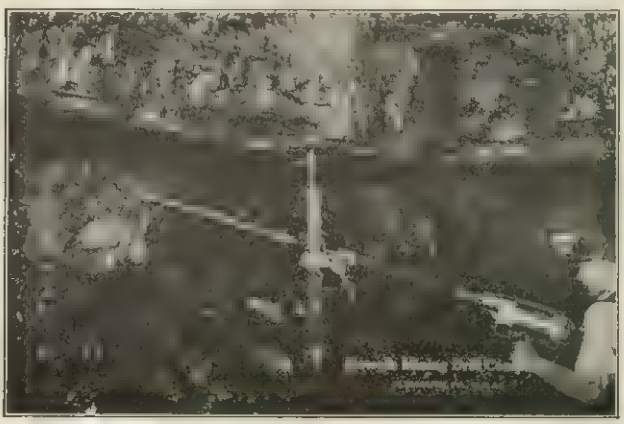
TRADE MARK "REG. U.S. PAT. OFF."

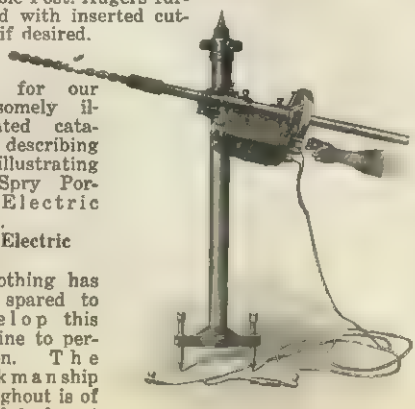
Products

Augers, Drills, Electric and Pneumatic; Prospectors' Drills; Post Drills, Geared and Ratchet; Drills, Solid Bar Machine; Drills, Pipe Ratchet; Spry Patent Coal and Rock Bits; Plug Machines; Spads; Shovels and Squibs; Needles, Scrapers, Hammers and Miners' Caps.

Spry One Man Electric Coal Drill

We make this light portable electric drill, for use as a Breast Auger, mounted on a Standard Bar, or equipped with different style posts. The motor is light, weighing but 45 pounds, and can easily be handled by one man. This machine is capable of drilling Coal, Shale and Soft rocks. The illustration shows the machine equipped with our "C" Adjustable Post. Augers furnished with inserted cutters, if desired.





Spry Type "S" Electric Drill

Send for our handsomely illustrated catalogue describing and illustrating the Spry Portable Electric Drills.

Spry Electric Drill

Nothing has been spared to develop this machine to perfection. The workmanship throughout is of the highest grade. The cumbersome starting box or dangerous arcing knife switch has been entirely eliminated. The switch we use is a great improvement over the plug switch, which is hard to find in the dark. To start the motor, a pull on the handle and a quarter turn to the left; to stop, a quarter turn to the right and let go. Impossible to start the motor accidentally. The motor is 3 H. P. and can be wound for 115, 230 and 500 volts. The motor carries 300% overload for short intervals and 500% momentarily. The machine shown at bottom of first column is capable of drilling any material which a steel auger can penetrate. In addition to boring coal, it can be used for drilling top and bottom rock. It will bore anthracite coal at the rate of 8 feet per minute. Will bore holes up to six inches in diameter and any reasonable depth. We furnish with the machine feed bars having six, eight, ten or twelve threads to the inch. Weight of motor and gears 115 pounds; three types of posts to select from.

Howells Prospector Drill

Especially adapted for proving territory in limited distances. Is mounted on a tripod and is adjustable to drill at any angle. Is provided with two cranks for two men, if necessary. The Ball Bearing feed device provides for drilling through material of varying hardness.

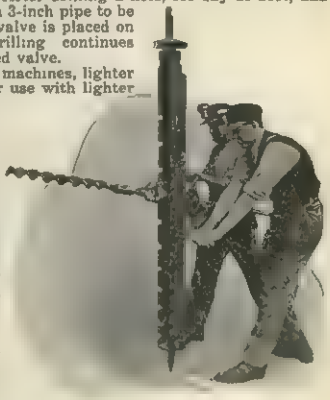
Post Drills, Geared

The illustration below shows our heavy-geared, heavy post drill, the strongest ball-bearing hand power drill manufactured. Bores all kinds of coal, slate, shale, medium rock and sulphur, etc., desired. We are often called upon to supply this machine for drilling long holes, principally for tapping water in old workings. After drilling a hole, for say 15 feet, and large enough for a 3-inch pipe to be driven in, a gate valve is placed on the end and drilling continues through the opened valve.

We make post machines, lighter in weight, and for use with lighter augers.

Drills, Ratchet

Our ratchet drills are designed mainly to be used where there is not sufficient room to use a cog bearing, as at the top or sides of the seam. For drilling top or bottom rock, where the material is hard, it has especial advantages over other drills. This drill is capable of boring anything which a steel auger will penetrate. We make a light or heavy post for this machine any length wanted to suit the seam; also supply the auger any length and any diameter wanted.



Heavy Geared Post Drill

INGERSOLL - RAND COMPANY

11 BROADWAY NEW YORK

BRANCHES THE WORLD OVER

Mine Power Plant and Coal Cutting Machinery

Products

Drills—Air and steam rock drills including mounted, hand hammer, drifter and stoper types; plug, auger and piston drills; Electric-Air drills and channelers; prospecting and core drills.

Drill Accessories—Tripod, column and quarry bar mountings; hollow, solid and twisted rock drill steel; steam, air and water hose; hose couplings and menders; rock drill throttles, oilers and manifolds.

Sharpening Equipment—Rock drill steel sharpeners; oil furnaces, coke forges and pedestal grinders for rock drill steel; shank and bit punches for hollow drill steel. Hand blacksmith tools and supplies.

Hoists—Portable compressed air and steam hoists for column or shop use; scraper-loader hoists.

Pneumatic Tools — Chipping, scaling and calking hammers; clay diggers and picks; riveters, holders-on and jam riveters; drills, including track, shop, close quarter and wood boring types; portable grinders and pneumatic wire brushes; compressed air motors and sand rammers.

As might be supposed, they have "a thousand and one" uses —hoisting, hauling, skidding, etc. in mines, mills, quarries and every other industry.

"Little Tugger" Single-Drum Hoist

"Little Tugger" Double-Drum Hoist

"LITTLE TUGGER" HOISTS	1-H & 1-HS	11-H & 11-HS	6 HC & 6HCS	10-H & 10-HS	10-HB & 10-HSB
Weight less Cable, lbs.	285	358	340	340	365
Width inches	21¾	31¼	25¾	14	18⅞
Length inches	10½	21½	25	26⅝	26⅝
Height, inches	20⅛	23	24½	18⅛	18⅛
			Haulage Drum, Tail Rope Drum		
Size of Drum, Rope Space, Diameter, inches	6	7	8 11	6¼	6½
Size of Drum between Flanges Length inches	7	17	4 9	5 5	3¼"
Depth of Flanges inches	3	5	1" 4" 550	1" 4"	3¼" 600
Rope Capacity feet	¼"—700	⅞" 300	⅜" 550 ⅝"—320	¼" 4"	⅜"—250
Hoisting Capacity ft. per min at 80 lb. Pressure, lbs.	¼" 450		⅜" 200 ⅝" 250	⅜" 250	⅝" 250
	85	85	170 250	85	125 2000
	1000	600	1700	1800	215—1800
Horse Power	3½	3½	7 5 1	12	5 10
Hose Recommended, inches	⅜	⅝	¾	1 1¼	1 1¼

"Little Tugger" Hoists are built in several sizes (to develop from 3½ to 12½ H. P. from 60 to 80 pounds gauge pressure) and in single and double-drum patterns.

A very important use of the double-drum (No. 6-H) "Little Tugger" is for "slushing" (shoveling and loading rock and ore) both underground and on the surface. Bulletins 4059 and 4056.

Type "Twenty" Mine Car Compressors

These are portable, complete, self-contained power plants for compressing air underground—right where it is used. The mine car compressor finds its principal uses in temporary work, such as developing gangways, etc., and in isolated places where the expense of extending the pipe lines seems unwarranted.

The Type "Twenty" consists of a vertical, single-acting, duplex, air compressor with automatic unloading device; D. C. or A. C. electric motor and control, direct-connected through quick detachable coupling; air receiver with pressure gauge, safety valve, drain cock and service valve; circulating water cooled with hopper reservoir and centrifugal pump; all mounted on a substantial steel frame on flanged wheels and axles.

It is fully equipped and needs only to be connected to a source of electric power.

It can be furnished for any commercial track gauge.

The overhead clearance is extremely low.

It is built in several sizes as listed below.

Full information on request.

TYPE "TWENTY" MINE CAR COMPRESSORS

Piston Displac., Cu. Ft. Per Min.	Air Pressure Designed For	Brake Horse Power	Overall Dimensions Feet and Inches		
			Length	Width	Height Over Rails
91	100	15	10'-0"	4'-1½"	3'-7"
160	100	25	10'-0"	4'-0"	3'-6"
230	100	40	10'-6"	4'-0"	4'-5"

"Little Tugger" Hoists

The "Little Tugger" Hoists are small, compact, portable—yet powerful—drum hoists. They can be clamped to a column or pipe or bolted to a timber in a few minutes time.

"Jackhamer" Drills

The "Jackhamer" is the superior hand hammer type rock drill. The distinctive features are: All steel, drop forged construction; automatic rotation; spring held front head; steel holder; automatic lubrication; efficient dust blowing device and "Butterfly" valve. The "Butterfly" valve is used on all types except the "DCR" and "DDR" which use a spool valve operating on the "Butterfly" principle.

BAR-33 "Jackhamer"

BBR-13 "Jackhamer"

The "Jackhamer" has been developed in a large variety of sizes and types, each suited to a particular class of work as mentioned. The last three types can be operated by either compressed air or steam. The last four can be furnished with or without water feeding device. (The letter "W" in the symbol indicates wet drills). Water is passed through the backhead and water tube, then to the hollow drill steel where it is mixed with air under pressure. "Wet" machines allay the dust and remove rock particles from the cutting face of the drill bit,

DCR-23 "Jackhamer"

TABLE FOR ALL TYPES OF "JACKHAMER" DRILLS

TYPE	BAR33	BBR13	BBR230	BCR430	BCRW430	DCR23	DCRW23	DDR13	DDRW13
Length with Steel Holder—Inches	17½	20	20	22¼	22¼	24	24	26¼	26¼
Length Without Steel Holder—Inches	15¼	17¾	17¾	20¼	20¼	22¼	22¼	25	25
Diameter of Cylinder—Inches	2⅜	2⅜	2⅜	2¼	2¼	2⅜	2⅜	2¾	2¾
Working Stroke—Inches	1⅜	1⅜	1⅜	3	3	3⅛	3⅛	3	3
Size of Air Hose—Inches	¾	¾	¾	¾	¾	¾	¾	¾	¾
Size of Water Hose—Inches	½	½	½	½	½	½	½	½	½
Steel Used—Inches	H. H. ⅞	H. H. ⅞	Twisted 1⅛	H. H. ⅞	H. H. ⅞	H. H. 1	H. H. 1	H. H. 1	H. H. 1
Size of Hexagon Steel Shank—Inches	⅞x3¼	⅞x3¼	⅞x3¼	⅞x3¼	⅞x3¼	1x4¼	1x4¼	1x4¼	1x4¼
Net Weight with Connections—Pounds	33½	37⅜	37⅜	47½	50½	58	61	73	76
Depth of Hole Recommended for—Feet	3 to 6	8 to 10	6 to 8	10 to 12	10 to 12	12 to 16	12 to 16	12 to 25	12 to 25

permitting each blow to do effective work. The cooling of the steel by the water has also been found beneficial in maintaining the temper of the bit.

1—Type "BAR-33" is for light drilling in soft or medium ground.

2—Type "BBR-13" and "BBR-230" are principally used with tw steel piston steel in coal or soft iron ore.

3—Type "BCR-430" is designed to meet the greater majority of hand hammer drill work.

4—Type "DCR-23" is designed for shaft sinking in average rock or for work requiring a slightly heavier drill than the "BCR-430."

5—Type "DDR-13" is built for the heaviest and roughest hand hammer drill service.

Bulletin 4046 covers "Jackhamer" Drills.

"Jackhamer" Mountings

The "Jackhamer" Mounting is adapted for use either on the arm of a column, horizontal shaft bar or on a tripod.

BCR-430 "Jackhamer" in Sliding Cone Shell Mounting

This is a thoroughly practical outfit for flat hole work, such as drifting, or tunnelling. The drill can, therefore, be used for a two-fold purpose; mounted for drilling flat holes in the heading and unmounted for drilling down holes in the bench. Full details on request.

"Jackhamer" Mountings	JB-11 for BBR 13 and BBRW 13	JC 12 for BCR 430 and BCRW-430	JC 11 for DCR 23 & DCRW 23	JD 11 for DDR 13 and DDRW-13
Length	45"	45"	45"	45"
Height	13⅝"	11¼"	9¾"	9⅝"
Distance from center of Jackhamer to Top of Mounting	2⅞"	2¾"	2⅞"	3⅛"
Distance from center of Jackhamer to Bottom of Cone	6¾"	4½"	4½"	8½"
Feed of Standard Mounting using ⅞" J H Shanks 3¼" long	26"	24"	26"	26"
Size of Cone (Sergeant type)	5"	5"	5"	5"
Weight	57 lbs	57 lbs	57 lbs	57 lbs
Weight with Dry Jackhamer	113 lbs	113 lbs	113 lbs	113 lbs
Weight with Wet Jackhamer	96 lbs	106 lbs.	116 lbs.	133 lbs.
Weight of Mounting Bored	102 lbs	89 lbs	89 lbs.	105 lbs

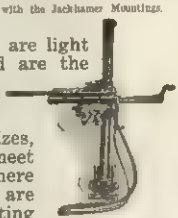
NOTE: The above table covers standard mountings with solid cone shells. Sliding cone shell mountings can be supplied when desired as follows. JB-10, JC-10, JC-11 and JD-10 for BBR, BCR, DCR and DDR respectively.

The Standard 2" S. S. Column is suitable for use with the Jackhamer Mountings.

"Leyner-Ingersoll" Drifters

"Leyner-Ingersoll" Drifters are light in weight, easily handled and are the standard drills of many of the largest mines and rock drilling projects of the world.

There are several different sizes, manufactured especially to meet different requirements. Where pressures of 70 lbs. or above are available and for the usual drifting and tunnelling work, the 148, 248, 448 or R-72 types are recommended. The R-72 has exceptional drilling speed and power. Where a light drifter is required the 26 type is recommended. The No. X-70 is the largest of the drifters and because of its weight and forceful blow, is recommended for extremely hard rock work or deep hole drilling. They have found their principal field in tunneling where holes from 20′ to 30′ are drilled.



No. 248 "Leyner-Ingersoll" Rock Drill

"Leyner-Ingersoll" Drifters	26	148	248	448	X 70	R-72
Weight, lbs	99	119	156	176	210	165
Length	40½	43¾	47¾	47¾	47¾	47¾
Length of Feed, in	20	24	24 and 30	24 and 30	30	24
Steels Round Hollow, in		1¼	1¼	1¼	1¼	1¼
Steels Hexagon Hollow, in	¾	•1	•1	•1	1	1
Air Hose Recommended, in	¾	1	1	1	1	1
Water Hose Recommended, in	½	½	½	½	½	½
Depth hole drilled ft.	6–9	8–12	8–12	8–12	20–30	12–16

*When used with anvil block.
†24" Feed Shell Solid or Adjustable Guides also furnished.

This hammer type drills embody a number of desirable features, such as automatic lubrication and rotation, water feed and chuck for all types of hollow steel.

Bulletin 4038 covers 148, 248 and 448 types. Bulletin 4120 the 26, and 4158 the X-70.

Column and Tripod Mountings

The Company is prepared to furnish both single and double screw columns. They carry clamps with "Sergeant" saddles, fitting all types of drills or Universal column arm and clamps which permits a wider range of set-up with more ease. A complete round can usually be drilled with one column set-up when the Universal is used.

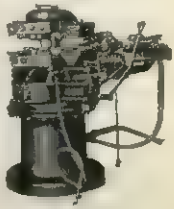
To suit special conditions the Company is prepared to furnish extra long columns, and special combination of column arms and clamps.

The Company also offers a complete line of tripods suitable for mounting all types of drills. All joints have cone surfaces, securing a powerful wedge effect under pressure of the adjusting bolts. The legs are telescopic and the weights adjustable.

Bulletin 9103 covers mountings.

"Leyner" Rock Drill Steel Sharpeners

"Leyner" Rock Drill Steel Sharpeners make and resharpen perfectly formed and accurately gauged bits of all sizes and types. Accurate gauging permits the employment of minimum gauge variation between successive steels. This means less rock to cut and drilling time saved.



"Leyner" No. 50 Sharpener

These sharpeners shank as well as sharpen and insure shanks true to shape and size.

They are built in several sizes as follows:

The **No. 50 Sharpener** for forming and sharpening Carr, four and six point, "X," "Z," single and double chisel bits up to 3⅝" gauge and all standard types and sizes of shanks on cruciform steel up to 2" diameter and on heavier sections such as round, hexagon, octagon, etc., up to 1¾" in diameter. It can be equipped to form bolt heads, pins, stanchions and in all about 200 different products. It will also successfully make and resharpen chain coal cutter bits.

Its capacity is, resharpening medium size steels 65-120 per hour. Forming new bits, 25-30 per hour. Bulletin 4322.

The **No. 4 Sharpener** for making and resharpening two, four and six point, "X," "Z," and single

and double chisel bits up to 2¼" in diameter, on round, cruciform, hexagon, octagon, quarter octagon and the heavier sections of twisted or branded steel of diameters not to exceed 1⅛". (For heavier work the No. 50 Sharpener is recommended).

Its capacity is, resharpening medium size steels 50-100 drill bits per hour. Forming new bits, 20-75 drills per hour. Bulletin 4322.

The No. 33 Sharpener for making and resharpening four, five or six point, "X," "Z," and single or double chisel bits up to maximum of 2" diameter, where the bits are of the standard 14 degrees taper. For Carr bits and other types of bits of a taper other than standard, the capacity is limited to bits not exceeding 1⅞" finished diameter. These bits can be made on round, cruciform and on the lighter sections of twisted or branded steel not exceeding 1⅛" in diameter; on hexagon or octagon steel up to 1" diameter; and on square steel not exceeding ⅞".

"Leyner" No. 33 Sharpener

This Sharpener may also be employed when equipped with shanking devices, for making collar shanks on ⅞" hexagon steel or ¾" square steel. Can also be equipped with an IRB-1 Bit Punch for punching holes in bits of hollow drill steel.

Its capacity is, resharpening ⅞" steel—75 to 100 drill bits per hour. Forming new bits—50-75 drill bits per hour. Bulletin 4322.

"LEYNER" SHARPENERS	No. 33	No. 4	No. 50
Weight, machine bare	925 lbs.	1750 lbs.	2525 lbs
Weight Steel Rest	38 lbs.	35 lbs.	35 lbs
Floor Space occupied	3' x 3'	4' x 4'	4' x 4'
Height Over All	48"	51"	53"
Maximum Steel Handled	1⅛" Round or Cruciform, 1" heavier section	1⅛" Round or Cruciform, 1" heavier section	1⅛" Cruciform 1⅝" Round hex or octagon
Maximum Gauge of Bit	1⅛"	2⅛"	3⅝"
Capacity—Stationary Bits	50–100	50–120	50–150
Air Pressure Recommended	70–100	70–100	70–100
Hose or Piping Recommended	¾"	1"	1¼"

Ingersoll-Rand Oil Furnaces

Ingersoll-Rand Oil Furnaces are built in two sizes. The No. 5F being especially adapted to drill steel sharpening plants employing one sharpener, and is capable of heating 1,000 to 1,500 pieces of steel per eight-hour shift. The No. 25 will effectively heat 1,600 to 2,400 pieces of steel per eight-hour shift using only one side of the furnace and both sides may be used.

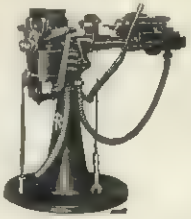
Ingersoll-Rand No. 25 Oil Furnace

These furnaces give a clear uniform heat which is at all times under the control of the operator and which is suitable for welding and tempering without special preparation; the smoke nuisance is abated and the absence of obnoxious gases is noted. Bulletin 9037 covers the No. 5F and Bulletin 9034 the No. 25.

Ingersoll-Rand Oil Furnaces	No. 5F	No. 25
Weight less tank—lbs	5	[illegible]
Floor Space—feet	2x4	3x4
Heating Surface—inches	7⅛x10	5[illegible]x24
Capacity—drills per hour	150–250	200–300
Oil Consumption—gals. per hour	2–4	2–4
Weight Oil Tank—lbs.	45	45
Capacity—gals.	50	50

"Leyner" Shank and Bit Punch

The "Leyner" Shank and Bit Punch removes the uncertainty of the punching out of drill steel and insures uniformity of the work so that no drill steel will leave the shop in imperfect condition. It punches out either shanks or bits on all sizes of steel and eliminates the costly experience of broken off pins in the drill steel hole.



"Leyner" Shank and Bit Punch

They are built in the Pedestal Pattern (in which case it is a distinct machine) and in the Attached-to-Sharpener Pattern (in which case it is an auxiliary part of the rock drill steel sharpening machine itself). This Punch can be used with any make of Sharpener.

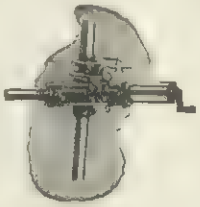
Leyner "TRIP" Shank and Bit Punch	Pedestal Pattern	Attached-to-Sharpener Pattern
Weight, Pounds	610	227
Floor Space, Inches	30x54	-----
Height, Inches	47	-----
Maximum Range of Punching, Inches	6	6
Air Pressure Used, Pounds Gauge	80-100	80-100
Hose Recommended, Inches	¾	¾

Ingersoll-Rand Swedish Drill Steel

A full line of special Ingersoll-Rand Swedish Drill Steel is carried for different types of drills, whether of piston or hammer type and quick deliveries can be made on demand. This steel may be had with or without shanks or bits and the bits may be of any style desired. Steel of the very best quality is used as the drilling capacity of a machine depends very largely upon its steels. It is, therefore, important that it be the best and carefully sharpened and tempered. The very best results may be expected from I-R Rock Drill Steel. Bulletin 9125.

"Radialaxe" Coal Cutters

The "Radialaxe" will drive entries, do shearing, cut out dirty bands and undercut and shear in a pitching seam better and more cheaply than can otherwise be done. In addition the "Radialaxe" is used for rock drill work, taking down rock roofs in entries, etc.



"Radialaxe" Coal Cutter

It is a modified rock drill on a column mounting, with a means of swinging it radially. It is easily operated, economical to maintain and a rapid cutter. They are in use throughout the world and users are more than satisfied. Bulletin 5106.

"New Ingersoll" Coal Punchers

An all around puncher adapted to thick or thin seams, hard or soft coal, high or low pressure.

It strikes hard, produces big tonnage, and, being supremely reliable, assures full output every day. It is correctly balanced, practically vibrationless and easy to operate.

It is a safe machine—cannot "race" nor is there any hard recoil. An automatic throttle cuts off the air when the pick misses and opens up again when cutting begins. Bulletin 5002.

"Calyx" Core Drills

The standard line of "Calyx" Core Drills includes machines driven by steam, gasoline engine, hand, horse, or any other form of independent prime mover. Standard sizes will handle cores from 1⅝ to 19 inches in diameter from a depth up to 4,000 feet.

These drills are "Diamondless"—chilled shot, "Calyxite," or a steel cutter being used in place of costly diamonds.

Their applications are numerous among which are, prospecting for ore, coal, clay, stone, etc., drilling wells for water, oil or gas and drilling large holes for mine ventilators, ore chutes, winzes, ammunition transmission, anchor bolts, etc. Catalog 9201.

KRAEUTER PLIERS

LARGE DISPLAY CASE NO. 54

Shows a complete line of Kraeuter Pliers. Green weathered oak finish, 48x24x3½ in. Furnished with glass front.

Case No. 54 ... Each $100 50

Case contains one each

No.	Name of Tool	Each
10- 6	tube—Revolving Punch	$1.70
1831- 8	in.—Lineman's	1.60
1831- 7	in.—Lineman's	1.40
1831- 6½	in.—Lineman's	1.25
1831- 5	in.—Lineman's	1.15
1831- 4	in.—Lineman's	1.05
1841- 6½	in.—Button's Pattern	.90
1841- 8	in. Button's Pattern	1.05
1841-10	in.—Button's Pattern	1.40
1880-10¾	in.—Staple Puller	2.25
1641- 5	in.—Milliner's	1.20
1651- 6	in.—Weaver's	1.40
365- 7	in.—Wrench, Alligator	1.50
1631- 5½	in.—Needle' Ns. (Cvd)	1.75
1581- 5	in.—Comb. Burner	1.20
1851- 5	in.—Nippers, End	1.15
1851- 6	in.—Nippers, End	1.25
1851- 7	in.—Nippers, End	1.50
1851- 8	in.—Nippers, End	1.75
2801- 8¼	in.—Dread, Lineman's	2.75
2801- 7	in.—Dread., Lineman's	2.50
2801- 6	in.—Dread., Lineman's	2.00
1821- 8	in.—Universal, Cutting	1.70
1821- 7¾	in.—Universal, Cutting	1.55
1821- 6½	in.—Universal, Cutting	1.40
1821- 5½	in.—Universal, Cutting	1.35
1356- 5½	in.—Comb. "Griptite"	.90
1973- 5½	in.—Comb. "Gripkut"	1.25
305- 5½	in.—Comb "Victor Jr"	1.10
1913- 5½	in.—Comb Thin Bent Nose	1.10
1933- 5½	in.—Comb. Th. Ns. Gripping	1.10
1923-10	in.—Comb Bent Nose	1.75
356- 8	in.—Combination	1.25
1305- 7	in.—Comb. "Victor Univ"	$1.35
1973- 7	in.—Comb. "Gripkut"	1.60
1913- 7	in.—Thin Bent Nose	1.40
1863 6	in.—Comb. "Grip-All Jr."	1.10
1356 6	in.—Comb. "Griptite"	1.05
1905- 7	in.—Comb. Thin Nose	1.25
1923- 8	in.—Comb. Bent Nose	1.50
1863- 9	in.—Comb "Grip-All"	1.40
356-10	in.—Combination	1.50
1601- 4	in Flat Nose	.80
1601- 4½	in.—Flat Nose	.85
1601- 5	in. Flat Nose	.90
1601- 5½	in Flat Nose	.95
1601- 6	in —Flat Nose	1.05
2601- 6	in —Diagonal	1.65
2601- 5½	in Diagonal	1.50
2601- 5	in —Diagonal	1.40
2601- 4½	in.—Diagonal	1.25
1591- 4½	in Milliner's	1.05
1741- 6	in Long Flat Nose	1.25
1721- 6	in Elec Lg. Nose, Cutt	1.60
1751- 6	in.—Flat Nose, L. Reh Cutter.	1.50
1771- 7	in.—Flat Nose, Very L. Rch	1.50
1611- 6	in. Round Nose	1.05
1611- 5½	in Round Nose	.95
1613- 5	in —Round Nose	90
1611- 4½	in —Round Nose	85
1611- 4	in —Round Nose	80
1593- 4½	in —Milliner's	1.40
1711- 5	in.—Chain, Sh. Nose	90
1671- 8	in.—Needle Long Nose	1.40
1621- 6	in.—Needle Nose (Fine)	1.60
1781- 7	in.—Flat Nose, Very L. Reh. Cutt	1.75

KRAEUTER PLIERS

SMALL DISPLAY CASE NO. 52

Case No. 52—With glass front. ..... Each $39 70

Contains one each:

No.		Name of Tool	Each
1781-	7	in.—Flat Nose V L Reach Cutting Pliers	$1.75
1593-	4½	in.—Millmers' Flat Nose Cutting Pliers	1.40
1761-	6	in. Elec. Long Nose Cutting Pliers	1.60
1611-	5	in.—Round Nose Pliers	.90
1621-	6	in.—Fine Needle Nose Pliers	1.50
1641-	5	in.—Elec. Short Needle Nose Cutting Pliers	1.20
2601-	5½	in.—Diagonal Cutting Pliers	1.50
2601-	4½	in.—Diagonal Cutting Pliers	1.25
1751-	6	in.—Flat Nose—Long Reach Cutting Pliers	1.50
1701-	6	in.—Short Nose Cutting Chain Pliers	1.25
1681-	6	in. Long Nose Cutting Chain Pliers	1.40
305-	7	in.—"Victor" Combination Pliers	1.25
1813-	7	in.—Bent Thin Nose Combination Pliers	1.40
1903-	7	in.—Thin Nose Combination Pliers	1.25
1873-	7	in.—"Gripkut" Combination Cutting Pliers	1.60
1861-	6	in.—Needle Nose Cutting Pliers	1.75
	18- 4	tube—Revolving Punch	1.50
1801-	8½	in.—Lineman's Cutting Pliers	2.35
1841-	8	in.—Button's Pattern Pliers	1.05
1821-	7½	in.—"Universal" Cutting Pliers	1.55
1831-	7	in.—Lineman's Cutting Pliers	1.40
1831-	6½	in.—Lineman's Cutting Pliers	1.25
1851-	7	in.—End Nippers	1.50
305-	5½	in.—"Victor" Combination Pliers	1.10
1973-	5½	in.—"Gripkut" Combination Cutting Pliers	1.35
1933-	5½	in.—Thin Nose Combination Gripping Pliers	1.10
356-	5½	in.—"Griptite" Combination Pliers	.80
356-	6	in.—"Griptite" Combination Pliers	1.00
356-	8	in.—"Griptite" Combination Pliers	1.25

This assortment is designed for dealers whose plier business does not warrant showing a full line, and is a great help where customers do not know the exact name of the tool they need. All staple numbers are included—and without question this display gets business.

COMBINATION PANEL NO. 6

No.	Each	No.	Each
1973- 7 in.	$1 60	305-7 in.	$1.35
356- 8 in.	1.25	1903-7 in.	1.25
1863- 9 in.	1 40	356-6 in.	1.05
356-10 in.	1 50	1913-7 in.	1.40
1923- 8 in.	1 60	356-5½ in.	.90

Panel No. 6 ..... Each $13 20

COMBINATION PANEL NO. 9

No.	Each	No.	Each
356-5½ in.	$0 95	1913-5½ in.	$1.10
1973-5½ in.	1.40	1933-5½ in.	1.10
1863-6 in.	1.10	305-5½ in.	1.10

Panel No. 9 ..... Each $6.75

PLIER ROLL NO. 100

For displaying pliers on the shelf of a show case. Roll can be lifted out and placed before a customer. May be carried by salesmen or used as tool kit.

No.	Each	No.	Each
356-5½ in.	$0.95	1923-8 in.	$1.50
356-6 in.	1 10	1973-5½ in.	1.40
356-8 in.	1 25	1973-7 in.	1.60
305	1 35	1841-8 in.	1.10
1903	1 25	1831-7 in.	1.40
1913-7 in.	1.40	1821-6½ in.	1.45

Roll No. 100..... Each $15.75

KRAEUTER PLIERS

KRAEUTER "GRIPTITE" SLIP JOINT COMBINATION PLIERS

"Beauty" Handles

No. 356. Full Nickel
6½ in. Pocket Size.
6 in. universal. Has screw driver.
8 in. strong build, nut gripping device.
10 in. long leverage. Powerful on pipes, etc.

Length	5½	6	8	10 in.
Ozs. each	2⅝	3½	11⅛	14½
Each	$0 80	1.00	1.25	1.50

Kraeuter "Gripall" Combination Plier

No. 1863. Full Nickel.
Has all features of a pipe, bolt or nut gripping tool. For both side and end action.

Length	6	9 Ins.
Ozs. Each	6	11½
Each	$1.10	1.40

No. 1063—6 inch. Similar to No. 1863, with beveled jaws. It gives the user the advantage of a bent-nose plier, in that it gives room for the hand to clear, thus protecting the user's knuckles, at the same time takes a firmer grip on the object.
No. 1063—6 in. Weight, 6 oz.
Each $1.20

Kraeuter "Gripkut" Slip Joint Side Cutting Plier

Beauty Handles.
Full Nickel.
Design patent plier. The latest Kraeuter creation, beauty and quality.

No. 1973.	Length	5½	7 in
Ozs. each		4¼	9
Each		$1 35	1 60

Kraeuter "Victor" Universal Slip Joint Combination Plier

No. 308. Full Nickel.
A KRAEUTER combination non-slip. A wonderful plier pipe wrench. Specially built to take odd shapes, round, triangular hall rounds, wire, nuts, etc.

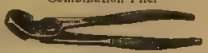
Length	5½	7 Ins.
Ozs. Each	6	8½
Each	$1.10	1.35

Kraeuter Bent Thin Nose Slip Joint Combination Plier

No. 1913 Full Nickel.
The narrow jaws reach into tight places and the bent nose saves barking your knuckles when turning a set nut.

Length	6½	7 Ins.
Ozs. Each	6	7¼
Each	$1.10	1.40

Kraeuter Bent Nose Slip Joint Combination Plier



Full nickel. Especially for angle work. Very powerful.

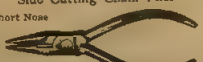
No. 1923	Size 8	10 in.
Oz. ea.	11⅛	14½
Each	$1 50	1 75

Kraeuter Thin Nose Slip Joint Combination Plier

No. 1903. Full Nickel.
The narrow nose enables you to reach into tight corners.
7 in. Long. 7½ Ozs. Each. Price 1.25

KRAEUTER Side Cutting Chain Plier

Short Nose



Kraeuter Finish

Very powerful for all purposes.

No.	Length	Oz. Each	Price
.701	6	3½	
		Each	$1.25

Kraeuter Thin Nose Gripping Plier

No. 1933. Full Nickel.
A vest pocket plier for the difficult job.
5½ Ins. Long 3½ Ozs. Each.
Each $1 10

KRAEUTER Long Nose Chain Cutting Plier

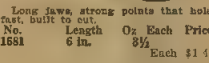
Kraeuter Finish

Long jaws, strong points that hold fast, built to cut.

No.	Length	Oz Each	Price
1681	6 in.	3½	
		Each	$1 45

KRAEUTER CHAIN PLIER

Long Nose



Kraeuter Finish

Long nose feature, with a range covering flat and round plier work.

No.	Length	Oz. Each	Price
1691	6 in.	3½	
		Each	$1.30

KRAEUTER Electricians' Long Nose Side Cutting Plier

Kraeuter Finish

Has 1-8 in. thin point. Ideal for electrical work and any use to which a chain nose is adapted.

No.	Length	Oz. Each	Price
1721	6 in.	3½	
		Each	$1 60

Kraeuter Electricians' Plier

Long Nose

Kraeuter Finish

With long nose and thin point, making it of greater use than the ordinary chain point.

No.	Length	Oz. Each	Price
1731	6	3½	
		Each	$1.60

Kraeuter Side Cutting Plier

Needle Nose

Kraeuter Finish

Long nose "tapered to point." Very useful on all fine and general work.

No.	Length.	Ozs. Each.	Price
1661	6	3½	
		Each	$1 75

Kraeuter Needle Nose Plier

Kraeuter Finish

The long tapered jaws permit of a wide range of work.

No.	Length	Oz. Each	Price
167'	6	3½	
		Each	$1.40

KRAEUTER PLIERS

KRAEUTER FLAT NOSE PLIERS

Kraeuter Finish.

No. 1601

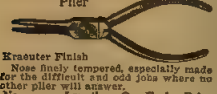
Length	4	4½	5	5½	6 in.
Ozs. each	2	2½	3½	4⅛	5⅛
Each	$0 85	.90	.95	1.00	1.05

Kraeuter Round Nose Pliers

Kraeuter Finish

No. 1611					
Length	4	4½	5	5½	6
Ozs. each	2	2½	3	4	5
Each	$0.85	.90	.95	1.00	1.05

Kraeuter Long Fine Needle Nose Plier

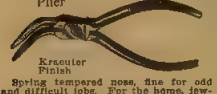


Kraeuter Finish

Nose finely tempered, especially made for the difficult and odd jobs where no other plier will answer.

No.	Length	Oz. Each	Price
1631	6 in.	3½	
		Each	$1.50

Kraeuter Curved Needle Nose Plier



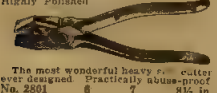
Kraeuter Finish

Spring tempered nose, fine for odd and difficult jobs. For the home, jeweler, electricians, mechanics, etc.

No.	Length	Oz. Each	Price
1631	5½	3½	
		Each	$1.75

Kraeuter's "Dreadnought" Electricians' and Linemen's Pliers

Highly Polished

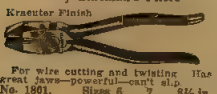


The most wonderful heavy duty cutter ever designed. Practically abuse-proof.

No. 2801	6	7	8½ in.
Ozs. each	7½	11	15⅛
Each	$2 00	2 50	2.75

KRAEUTER Heavy Lineman's Pliers

Kraeuter Finish



For wire cutting and twisting. Has great jaws—powerful—can't slip.

No. 1801.	Sizes 6	7	8½ in.
Ozs. each	7⅛	11	15⅛
Each	$1.70	2.00	2.35

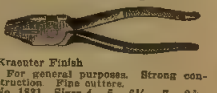
KRAEUTER Universal Cutting Pliers

Kraeuter Finish

For the house, mechanics, repair men. Has burner, round grip, wire cutter, reamer and screwdriver features.

No. 1821	Sizes 5½	6½	7½	8 in.
Oz. each	6	7⅛	10⅛	12⅛
Each	$1 35	1 40	1.55	1.70

Kraeuter Mechanics' and Electricians' Cutting Pliers



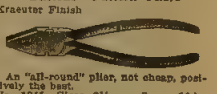
Kraeuter Finish

For general purposes. Strong construction. Fine cutters.

No. 1831	Sizes 4	5	6½	7	8 in.
Oz. each	2½	4	7⅛	9	13
Each	$1.05	1.15	1.25	1.40	1.50

KRAEUTER "Buttons" Pattern Pliers

Kraeuter Finish



An "all-round" plier, not cheap, positively the best.

No. 1841	Sizes 6½	8	10 in.
Oz. each	8⅛	12	14⅛
Each	$0 90	1.05	1.40

Kraeuter "Milliners" Cutting Plier

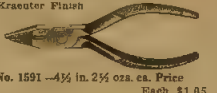
Kraeuter Finish

Fine for milliners and general all round work.

No.	Length	Oz. Each	Price
1641	5	3½	
		Each	$1.20

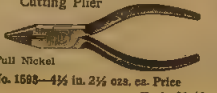
Kraeuter "Milliners" Flat Nose Cutting Plier

Kraeuter Finish



No. 1591 —4½ in. 2½ ozs. ea. Price Each $1 05

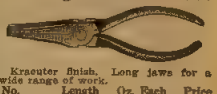
Kraeuter "Milliners" Flat Nose Cutting Plier



Full Nickel

No. 1598—4½ in. 2½ ozs. ea. Price Each $1 40

KRAEUTER Extra Long Reach Flat Nose Plier

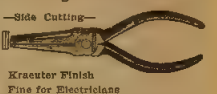


Kraeuter finish. Long jaws for a wide range of work.

No.	Length	Oz. Each	Price
1741	6	3½	
		Each	$1 25

KRAEUTER Extra Long Reach Flat Nose Plier

—Side Cutting—



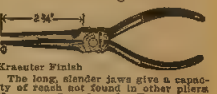
Kraeuter Finish

Fine for Electricians

The long nose permits a usage covered by many sizes of pliers.

No.	Length	Oz. Each	Price
1751	6	4½ Each	$1.50

Kraeuter Very Long Reach Side Cutting Plier

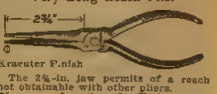


Kraeuter Finish

The long, slender jaws give a capacity of reach not found in other pliers.

No.	Length	Oz. Each	Price
1781	7 in.	4¾	
		Each	$1.75

KRAEUTER Very Long Reach Plier



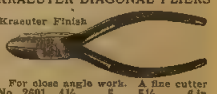
Kraeuter Finish

The 2¾-in. jaw permits of a reach not obtainable with other pliers.

No.	Length	Oz. Each	Price
1771	7	4¾	
		Each	$1.50

KRAEUTER DIAGONAL PLIERS

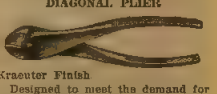
Kraeuter Finish



For close angle work. A fine cutter

No. 2601	4½	5	5½	6 in.
Ozs. each	2½	3½	4⅝	5⅛
Each	$1.25	1.40	1.50	1.65

KRAEUTER EXTRA HEAVY DIAGONAL PLIER



Kraeuter Finish

Designed to meet the demand for a diagonal plier with a powerful leverage. Practically unbreakable.

No. 2611—Length, 7 in. Weight, 8 oz. ..... Each $1 90

CAST IRON RANGES

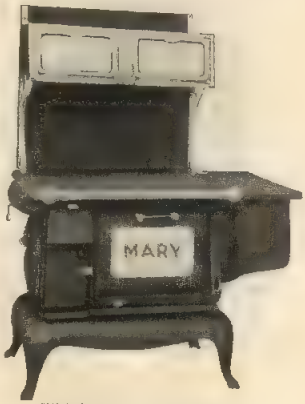
MARY

One of the most popular medium priced ranges on the market, first class material and workmanship, will give satisfaction and service where range of this character is needed. Has duplex grate; large fire box; heavy three piece fire back; white enamel drop oven and high closet doors, large nickeled towel rod; full nickel trimmed high closet drop fire door; copper lined reservoir, capacity eight gallons.

Square, With High Closet

For Coal or Wood

No.	68-18B
Size of oven, in.	18x18
Weight crated, lbs.	375
Each	$70.00



With Reservoir and High Closet

For Coal or Wood

No.	68-18B
Size of oven, in	18x18
Weight crated, lbs.	400
Each	$86.00

Square, With Guard

For Coal or Wood

No.	68-18B
Size of oven, in.	18x18
Weight crated, lbs.	325
Each	$80.00

With Reservoir and Guard

For Coal or Wood

No.	68-18B
Size of oven, in.	18x18
Weight crated, lbs	350
Each	$75.00

Water Front for Circulating Boilers $11.00 Extra

CAST IRON RANGES

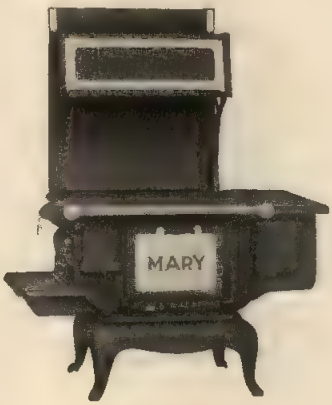
MARY

The best quality low price cast range sold on any market. First class material and workmanship. Has flat dump grate; large fire box, white enamel drop oven door; large nickeled towel rod; swing fire door; copper lined reservoir, capacity six gallons.

Square, With High Closet

For Coal or Wood

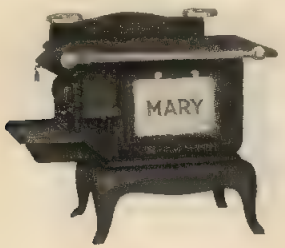
No.	48-27L
Size of oven, in.	16x16
Weight crated, lbs.	300
Each	$52.00



With Reservoir and High Closet

For Coal or Wood

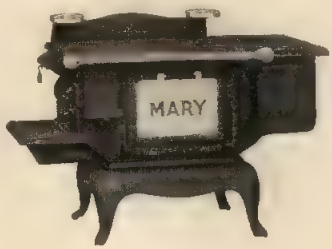
No.	48-27L
Size of oven, in.	16x16
Weight crated, lbs.	325
Each	$66.00



Square, With Guard

For Coal or Wood

No.	48-27L
Size of oven, in.	16x16
Weight crated, lbs.	275
Each	$45.00



With Reservoir and Guard

For Coal or Wood

No.	48-27L
Size of oven, in.	16x16
Weight crated, lbs.	300
Each	$58.00

Water Front for Circulating Boilers $11.00 Extra

COOK STOVES
FOSTER'S FLYER

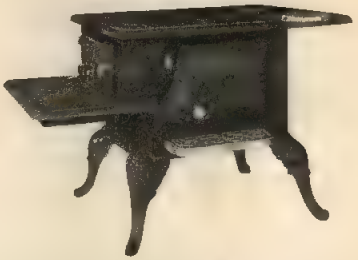
Duplex Grates, For Coal or Wood

Two flue construction. Has a four piece top, cut long center duplex grate, large slide hearth, oven door and top extension shelves.

Made to meet the steadily increasing demand for a neat, plain pattern, devoid of all nickel trimmings and ornamentation.

Nos.	7A-16	8A-16	8A-18
Number of holes	4	4	4
Diameter of holes, in.	7	8	8
Size of oven, in.	16x16	16x16	18x18
Height, in.	28	28	29
Size of top, in.	22½x27	22½x27	24½x29
Pipe collar, in.	6	8	7
Weight crated, lbs.	225	225	275
Each	$48.50	50.50	55.00

COOK STOVES
FOSTER'S NEW LEADER



For Wood Only

A plain wood stove which will work well and give good satisfaction. It is made plain, but in material and workmanship it is the same as our better grades of stoves.

Has oven door shelf and kicker, large top extension shelf, swing hearth plate and cut long center

Nos.	7–16	8–16	8–18
Number of holes	4	4	4
Diameter of holes, in.	7	8	8
Size of oven, in.	16x16	16x16	18x18
Height, in.	27	27	29
Size of top, in.	23x25	23x25	24x27
Pipe collar, in.	6	6	6
Burns wood, in.	20	20	22
Weight crated, lbs.	200	200	235
Each	$38.50	40.50	45.00

FOSTER'S KENOVA

Dump Grates for Coal

A light and cheap stove made to sell where price is the main consideration. Has cut top, cut long center, dump grate and large sliding hearth plate. It will give satisfaction with a good flue.

No.	8–16
Number of holes	4
Diameter of holes, in.	8
Size of oven, in.	16x16
Size of top, in.	23x27
Weight crated, lbs.	200
Each	$43.00

FOSTER'S MERIT

For Wood Only

A very cheap wood stove, substantially built. It is made in one size only and takes the place of the old-time step stove. Burns 18 in. wood, 6 in. pipe collar.

No.	7–14
Number of holes	4
Diameter of holes, in.	7
Size of oven, in.	14x14
Size of top, in.	20½x22
Height, in.	25
Weight crated, lbs.	125
Each	$26.50

COOK STOVES

MARY

For Coal

Duplex Grates, Plain Design

Extra heavy fire back, large fire box, back shelf, side sneif and kicker. Four holes, 8 in. diameter, 6 in. pipe collar.

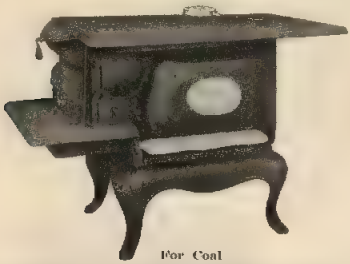
Nos.	48–17	48–19
Size of oven, in.	17x17	19x19
Weight each, lbs.	195	220
Each	$34.00	40.00

For Wood Only

Basket Grate, Plain Design

A plain cook stove that will give satisfaction With back shelf, side shelf and kicker, 6 in. pipe collar, four holes.

Nos.	715	815	817	819
Diameter holes in	7	8	8	8
Size oven, in.	15x15	15x15	17x17	19x19
Weight each, lbs	130	140	175	200
Each	$20.00	23.00	30 00	36.00

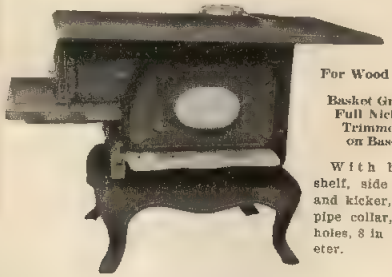


For Coal

Duplex Grates, Full Nickel Trimmed, on Base

Extra heavy fire back, large fire box, back shelf, side shelf and kicker. Four holes, 8 in. diameter, 6 in. pipe collar.

Nos.	58–17	58–19
Size of oven, in	17x17	19x19
Weight each, lbs	205	235
Each	$40.00	46.00



For Wood Only

Basket Grate, Full Nickel Trimmed on Base

With back shelf, side shelf and kicker, 6 in. pipe collar, four holes, 8 in diameter.

Nos.	18–17	18–19
Size oven, in.	17x17	19x19
Weight each, lbs.	185	215
Each	$34.00	40.00

STEP STOVES

FOUR CAP

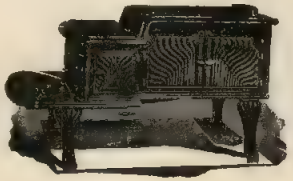
For Wood Only

No. 7 has swing oven doors, No. 8 has drop oven doors. No 7 has 6 in. collar, No. 8 takes special collar joint pipe

Nos.	7	8
Number of holes	4	4
Diameter of holes, in.	7	8
Burns wood, in.	19	24
Weight crated, lbs.	175	200
Each	$30.00	36 00

Note—We can furnish No. 7 with coal linings at an extra charge.

SIX CAP



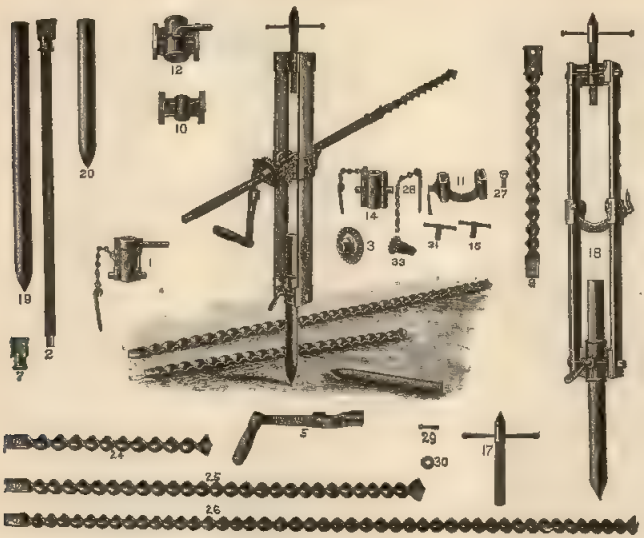
For Wood Only

With double swing oven doors, takes special collar joint pipe.

No.	8
Number of holes	6
Diameter of holes, in.	8
Size of oven, in.	25
Weight crated, lbs.	300
Each	$60.00

COAL DRILLS

ALTON POST



END GEAR ONLY

Alton Post Coal Drill Complete with end gear and three augers posts 18, 24, 31, 36 and 48 inches high, weight each 85 lbs. . . . . Each ..$18.00

All Coal Machines Equipped with Thread Bars and Boxing, 8 Threads to the Inch

EXTRA PARTS FOR ALTON POST COAL DRILLS

No	Name of Part	Weight, lbs.	Each	No.	Name of Part	Weight, lbs	Each
1	Thread box	2¾	$4.00	18	Post, complete, 3 ft and under.	35	$10 00
2	Thread bar	8	4 00	19	Post pipe, long	5½	1,60
3	Large bevel wheel	2	1.00	20	Post pipe, short	3	1 60
5	Crank	2½	1.80	24	Short auger, 2 feet long	5	70
7	Auger socket	1	.50	25	Medium auger, 4 feet long	10	1 40
9	Auger extension	4	1.40	26	Long auger, 6 feet long	15	2.10
10	Top post jack screw casting	2	2.00	27	Set screw for Nos. 10 and 12	⅛	20
11	Post slide, complete	3	2.00	28	Steel pin and chain for thread box.	⅛	30
12	Lower post end casting, complete	4	2.00	29	Spring key for crank	ε	30
14	End gear thread box (alloy)	4	1.80	30	Steel washer for crank pinion	1/32	30
15	Small jack screw for No. 11	¾	.30	31	Tail screw for No. 12	¾	30
17	Post jack screw	2¼	1.20	33	Small bevel wheel—long hub.	1	80

When ordering parts, please give both number and name.

When Ordering Drills, Always Specify the Length of the Post Desired

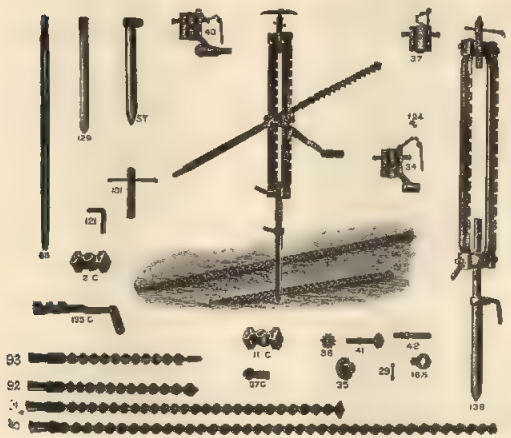
ROCK MACHINES

Above machines can be supplied for drilling hard substances, such as slate, etc. The thread bar is 12 threads to the inch, which is a slow feed, and smaller augers, made of the best tool steel. Price is $2.50 above price of regular coal drill.

Rock Augers for Rock Machines, per Foot $1.50.

COAL DRILLS

"QY" NOTCHED POST



WITH END GEAR ONLY

Each

"QY" Notched Post Coal Drill. Complete with end gear and three auger posts, 18, 24, 30, 36, and 48 inch high, weight each 70 lbs. $18.00

All Coal Machines Equipped With Thread Bars and Boxing, 8 Threads to the Inch.

Extra Parts for "QY" Notched Post Coal Drills

No.	Name of Part	Weight, lbs.	Each
11C	Casting for post (jack screw No. 101 fits in)	4	$2.00
12C	Casting for post (No. 129 fits in)	4½	2.00
16½	Ring for 1¼ in boot	¾	.40
29	Small spring key or shaft	⅛	.30
34	Thread box (alloy metal)	3½	4.00
35	Large gear wheel	1	1.00
36	Small gear wheel	½	.80
37	End gear thread box	2¾	1.80
37C	Square socket for augers	1	.40
40	Thread box, complete with No. 42 shaft and No. 36 small pinion	4½	4.00
41	Thread box shaft, with No. 36 small pinion, complete	½	1.90
42	Thread box shaft	¾	1.00
55	Thread bar	8	$4.00
57	Small boot, 1¼ in. in diameter	3	1.60
90	Long or 6 ft. auger	15	4.20
91	Medium or 4 ft. auger	10	2.80
92	Short or 2 ft. auger	5	1.40
93	Auger extension, 2 ft long	5	1.40
101	Jack screw	2¼	1.20
121	Tail set screw	½	.30
124	Set screw for No. 11C and 12C.	½	.20
129	Small size stem that fits in No. 57	7½	1.30
135C	Crank	2½	1.80
138	Post, complete, 3 ft and under	35	10.00
131C	End gear thread box	4	2.30
254	Ratchet crank	2¾	4.00

Rock Augers for Rock Machines, per Foot $1.50

Rock Machines Equipped with Rock Augers, Bars and Boxing, 12 Thread $2.50 Extra

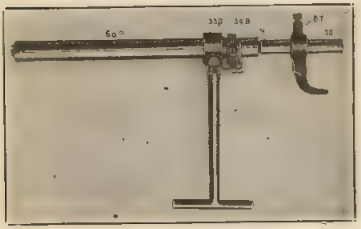
When ordering parts, please give both number and name.

When Ordering Drills Always Specify the Length of Post Desired.

*MINING DRILLS

NIXON RATCHET

Cut Shows Drill Supports



Cut Shows Drill

Cut Shows Bits

NEW MODEL B

For Boring Coal, Iron Ore, Slate, Stone, Etc.

The Nixon ratchet mining drill bores rock, slate and ore. Only one man is necessary to handle and work it, and he can work it any close place he can go himself. Nixon ratchets have 8 inches differential in post set-up. The post or support, being made of gas pipe, telescope fashion, is extensible. This gives it a range that covers any width or height of vein of entry from 5 to 8 feet. One screw bar in the ratchet affords a feed ranging from nothing to 2½ threads per inch. Where power plants are already installed, there are many places that holes can be bored cheaper with this ratchet than with power drills, especially in places where it is inconvenient to connect with power supply.

	Each
Complete with 18, 36 and 54 inch bits	$50.00
Ratchet mining drill only	32.50
Support, extensible 5-8 feet	8.50

By using the eight inches differential on the drill shank added to the 18-inch screw extension, and taking the trouble to loosen the dog, 2, 4 and 6-foot bits might be used.

*EXTRA PARTS FOR NIXON RATCHET MINING DRILLS

No.	Name of Part	Each
2	Wrench	$0.60
9	Ratchet feed nut	6.50
10	Screw bar	13.50
Bits	18 inch $3.00, 36 inch $5.50, 54 inch $6.50; Per Set of Three	14.50
Bits	24 inch $3.50, 48 inch $6.00, 72 inch $8.00; Per Set of Three	17.00
23	Feed ring set screw	.60
24	Main stem, gas pipe	5.50
25	Inside stem, gas pipe	4.30
26	Main stem, point	1.30
27	Inside stem socket nut	2.70
28	Inside stem socket screw	2.70
29	Brace ring and set screw	1.30
30	Regulating ring and set screw	1.30
33B	Handle or lever with pawl and spring	10.00
34B	Feed ring, with pawl, spring and set screw	8.30
37	Dog, connects drill	2.00
43	Screw bar ferrule	1.30
50B	Steel barrel, socket and milled ratchet	15 50
51A	Bronze thrust ring	.60

All parts not followed by letter B are interchangeable with old or No. 1 Nixon drills.

*Not carried in stock, shipped F. O. B. factory at Chattanooga, Tenn.

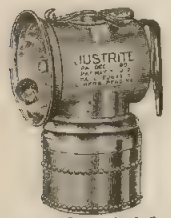
Lever feed, self-lighting—no matches required.

These lamps burn acetylene gas, produce from 10 to 16 candle power and give a steady white penetrating light. Do not smoke nor flicker, are absolutely safe, simple to operate and very economical. For miners, hunters, campers, fishermen, machinists and plumbers. They are made in two parts, water reservoir and carbide container—drawn from seamless brass. Every lamp is perfect in material and workmanship.

"Superintendent."

Superintendent burns 3 hours on one filling; lever feed and lighter attachment; nickel plated; 2½ inch reflector with sparker attachment.

No. 100—Complete with pocket carbide can and extra repair parts; weight, each, about 1 lb. **Per dozen**.....**$20 00**



2¼" reflector. Lever feed, flat hook.

Drawn from seamless brass. Attached parts are riveted and soldered inside. Deep concave reflector is part of the lamp, cannot get loose or be broken off. Equipped with lighter attachment.

Height of lamps, 4 inches; diameter of bottom 2 inches; water tank 1¾ inches in diameter, 2¼ inches long.

No. 414—Polished brass; with No. 77 carbide can; 16.7 candle power; capacity 2 ounces, ⅛-inch carbide. Weight, 5 ounces. Per doz..**$18.00**

No 417—Polished brass lamp only. Per dozen **$17.00**

No. 477—Same as No. 417 except it has saucer-shape reflector, 3½ inches in diameter. Per dozen.....**$20 00**

Justrite.

"Justrite," 16.7 candle power; lever wire feed, round hook and lighter attachment; polished brass; 2¼ inch reflector with sparker attachment.

No. 85 — Complete with one extra container; weight, each, about ¾ pound. Per dozen **$15.00**

No. 407—Same as above polished brass lamp only. Per dozen.. 12.00

No. 704—Polygon feed, round hook and lighter attachment; 2¼-inch concave reflector; polished brass with one extra carbide can. Per dozen **$15.00**

No. 707—Same as above with lamp only. Per dozen. 12.00

Victor.

No. 661—Miners Cap Lamps. Polygon feed, verticle style, detachable reflector and brace, saucer shaped reflector 2⅝ inches in diameter, polished brass round hook lamp only. Especially made for working low seam coal. Per dozen.....**$9.00**

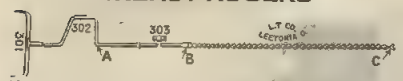
No. 671—Same as above, but with flat hook. Per dozen..... 9.00

No. 676—Flat hook and 3-inch reflector, otherwise same as above. Per dozen 9.50

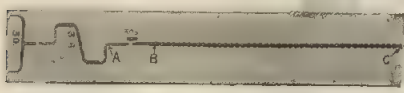
No. 77—Extra Carbide Containers. Per dozen **$1.50**

MINERS' SUPPLIES

BREAST AUGERS



No. 300—Single crank handle, 6 feet long, length twist, 4 ft.; for 1½-inch; soft coal; weight, each, 14 pounds. Per dozen $30.00



No. 319—Double crank handles, otherwise same as above. For soft coal; weight, each, 16 lbs. Per dozen...$45.00

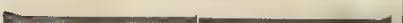
SINGLE END SCRAPERS

No. 185—With turned handle; **single end scraper;** 6 feet long, made from ⅝-inch round Norway iron; weight, each, 8 pounds. Per dozen.....$8.00

DOUBLE END SCRAPERS

No. 185D—All steel **double end scraper,** 6 feet long, made from ⅝-inch round Norway iron; weight, each, 2⅝ lbs. Per dozen $8.00

TAMPING BARS



No. 187—6 ft. x ⅞ in. All Steel Tamp Drill. To be used with double bit or machine drill. **Iron tampering bars,** 1 inch, round, 2¼ inch bit, 6 feet long. Per dozen $22.00

Note—⅞-inch is about the largest used; the 1-inch is about obsolete.

No. 177—6ft. x 1½-inch Copper Long Head Tamp Drill on ⅞-inch round; **copper tipped tamping bars,** 1 inch, round, 2¼ inch bit, length over all, 6 feet, copper end with tamp extends 6 inches; open stock; weight, each, 10 pounds. Per dozen.....$35.00

TAMP ENDS

No. 176—Tipped Tamp Ends, 1⅞-inch round; 1½-inch copper long head; length over all, 18 inches; copper end with tamp extends 6 inches, iron 12 inches; weight about 4 lbs. Per dozen.....$25.00

NEEDLES

No. 184—Steel Miners' Needles, highly polished; all welded handle; 6 feet long, ⅜-inch taper; will not bend. Per dozen $10.00

No. 175—Copper Miners' Needles, highly polished; 6 feet long, 7 16 inch taper; will not bend. Per dozen..$35.00
One dozen in a bundle, weight, per dozen, 30 lbs.

MINERS' LAMPS

Half Shift Lamps, for Metal Mines. Strong—Durable—Compact.

Can be used by drivers, motormen, inspectors, etc. Burns 10 hours on one charge of carbide and water; self-lighting attachment; gives a penetrating light, protected by strong lens. Will not blow out.

No. 44—(Cap not included); weight complete, about 2¾ pounds. Per dozen $100.00

One outfit in a box.

Auto-Lite.

It is made in two parts, water reservoir and carbide container, drawn from seamless brass. Every lamp is guaranteed perfect in material and workmanship.

A new principle in water feed—a valve enclosed in a ¼ inch tube, so constructed that it increases or decreases the supply of water, enabling the user to burn the flame at any size desired.

The hook is securely soldered, fits all caps.

The clasp is made of spring brass wire, holds lamp secure to cap; will fit all standard cap shields.

The burner tip is made of imported lava. Will not clog and does not require agitation in order to obtain water as needed.

The valve is operated by a lever sliding back and forth over notches, and held firmly in place by a small spring.

The sparker or ignitor on reflector makes matches unnecessary as sparks are produced by turning wheel. Height, 3⅝ inches; 2-inch reflector.

No. 101X—Complete with one extra carbide contained. Weight, each, 8 ounces. Per dozen.....$15.00

Container for No. 101X—Per dozen $2.25

One in a carton.

Auto-Lite.

Light in weight, yet strong and durable. A miners' cap lamp on account of being worn on the head must be light in weight yet strong and durable. The lamps on account of their compact and scientific construction weigh less than five ounces—yet they are the strongest and most durable made. A steady even flame that does not flicker. Requires little or no attention when once you have filled it with carbide and water. The principal part of any acetylene mine lamp is the dropper. The steady, even flow of water causes a steady, even flame—when the flow of water is uneven the flame flickers—then to, any other water dropper construction when embedded in the carbide has a tendency to get clogged up, which gives the user no end of trouble. It can never get clogged up, gives a steady even flow of water at all times and never needs cleaning.

No. 102X—Polished brass lamp, 2½-inch silver nickeled reflector with self lighter. Per dozen.....$15.00

One in a carton.

Containers for No. 102X—Per dozen $1.60

CARBIDE CLEANERS

Carbide Cleaners

No. JR—For Justrite lamps, weight, dozen, about ⅝ lb. Per doz...$1.50

LAMP REPAIRS

Rubber Gaskets.

No. 60—Per doz.$0.30

Felt Packing.

No. 62—Per dozen.$0.30

Flints.

No. 172—Per dozen...$0.50

Lighters.

No. 177—Lighter, complete. Per dozen $1.50

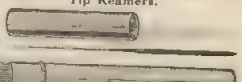
Burner Tips.

A perfect metal tip. Shell made of brass with an imported lava burner insert, combining the best qualities of the metal and lava tip; cannot break or crack; easy to put in and take out.

No. 28—Jewel metal tip. Per dozen $0.70

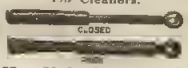
No. 66—Lava tip, with air holes. Per dozen $0.40

Tip Reamers.



No. 145 Reamers. One dozen in a metal tube. Per dozen.....$0.80

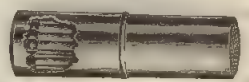
Tip Cleaners.



No. 37—50 hard, rust-proof steel wires, sliding cover. Wires protected when not in use. Dozen...$1.50

MATCH BOXES

Waterproof Match Boxes.



No. 75—Round, seamless brass, nickel plated; size, 2⅝x⅞. Per doz.$2.00

MINERS' CAPS

Not affected by either fire, water or oil.

Made of heavy-weight "Special Shrunk" white duck, flannel lined. The visor is made of heavy material covered with white duck, and will not be affected by water or dampness. The lamp-holder is constructed of 2X tin, interlined with vulcanized fibre, making it very durable. This lamp-holder is the one that has been adapted for the carrying acetylene lamps by all the acetylene lamp manufacturers.

No. 97—Assorted, sizes 7⅛ to 7⅝. Weight, per dozen, 3 pounds. Per dozen $4.00

Straight Sizes—6¾, 7, 7⅛, 7¼, 7⅜.

MINERS' PICKS

Leetonia.

Short ear cutting pick, oil finish, B flat.

Pounds	**2**	**2½**
Per dozen	$7.40	8.00
Pounds	**2¾**	**3**	**3¼**
Per dozen	$8.30	8.50	9.00

Short ear mining pick, Leetonia Western Pattern, oil finish; japanned.

Pounds	**1¾**	**2**
Per dozen	$7.00	7.00
Pounds	**2¼**	**2½**
Per dozen	$7.70	8.00

Open stock.

DRIFTING PICKS

No. 47—Klein, Logan & Co.'s, cast steel, adze eye, oil finish.

Size	**1**	**2**
Weight, lbs.	3	4
Per dozen	$12.50	14.00
Size	**3**	**4**	**5**
Weight, lbs.	4½	5	6
Per dozen	$15.00	16.00	17.50

Two dozen in a case.

CLAY PICKS

Crown, Adze eye, cast steel, painted blue, axe finish

Weight, lbs.	**5 to 6**	**6 to 7**
Per dozen	$14.00	15.00

No. 35—Klein, Logan & Co.'s, adze eye, cast steel, axe finish.

Weight, lbs.	**5 to 6**	**6 to 7**
Per dozen	$14 00	15.00

Two dozen in a case

GRUB HOES

No. 1—Klein, Logan & Co.'s, cast steel, axe finish; 3¾ in. cutter; weight, 3½ lbs. Per dozen..$13.00

No. 2—Klein, Logan & Co.'s, cast steel, axe finish; 4 in. cutter; weight, 4 lbs. Per dozen.....$13.50

Two dozen in a case.

MATTOCKS

No. 10 K. & L. Co., western pattern, adze eye, cast steel, axe finish.

Weight, each, lbs.	**5**	**6**
Size of hoe, in.	3¼x4	3½x4¼
Size of cutter, in.	5¾x3¼	6x3½
Per dozen	$16.00	$17.00

Two dozen in a wood box.

Crown—Adze Eye, Cast Steel, Axe Finish, Painted Red and Blue.

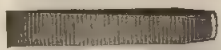
Weight, each, lbs.	**5**	**6**
Size of hoe, in.	4	4¼
Size of cutter, in.	3	3½
Per dozen	$16.00	$17.00

Two dozen in a wooden box.

Hunt's—Adze eye, cast steel, axe finish; weight, 6 lbs.; size of hoe, 4¼ inches; size of cutter, 3½ inches. Per dozen $36.00

Two dozen in a wooden box.

FROST WEDGES



Frost wedges—18 and 20 inches long, 2¾ to 3 inch bit; head, 2¾ to 3 inches square; weight, 14 to 24 pounds. Per pound.....$0.23

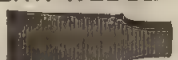
CHOPPERS WEDGES

No 2X—Standard pattern, solid steel oil finish; weight, 3 to 6 lbs. Per 100 lbs. $18.00

No. 3X—Truckee or California pattern; standard quality, solid steel, oil finish; weight, 3 to 6 pounds. Per 100 lbs. $18.00

All above, open stock.

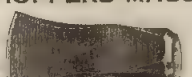
SAW WEDGES



No. 6X—Extra quality, solid steel, oil finish; weights, 1, 1¼, 1½ and 1¾ lbs. Per pound..... ...$0 20

No. 6X—Extra quality, solid steel, oil finish; weights, 2 and 3 pounds. Per pound $0.20

CHOPPERS MAULS



No. 8, Oregon pattern, plain eye—Solid steel, oil finish; weight, 6 to 10 pounds. Per pound.....$0.36

No. 9, Oregon pattern, axe eye—Solid steel, oil finish; weight, 6 to 10 lbs. Per pound $0.36

All above, open stock.

MYERS-WHALEY COMPANY

KNOXVILLE, TENN., U S A

Myers-Whaley Shoveling Machines

Since 1908

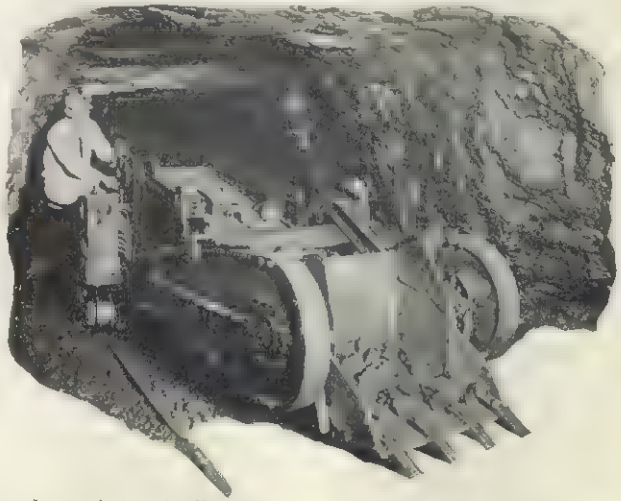
Product

The Myers-Whaley Shoveling Machine, The All-Around Loader for Underground Work is the Exclusive Product of the Myers-Whaley Plant.

Myers-Whaley Machines today represent the highest development of underground loaders. Sixteen years of continuous production and development of one type of machine accounts for the past performance and present excellence of design, construction and durability of these machines.

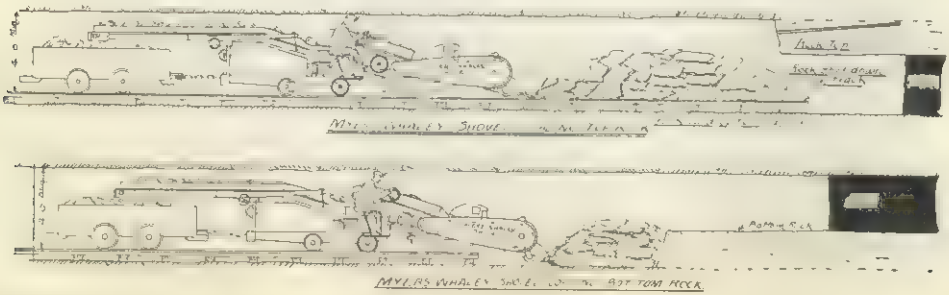
There are no "Kinks" to be ironed out, no apologies to be made, and the guarantee means something.

Low repair and maintenance cost is attributable to the fact that the machines "have their upkeep built into them," high quality steel castings of ample dimensions and weight guarantee strength and endurance of frame members, gears and sprockets cut from forged blanks, carbonized and heat treated insure uninterrupted service. Interchangeability of parts, accuracy of construction and assembly are ensured by use of gauges, jigs and fixtures. As far back as 1913 we have records of a machine loading rock salt (33,600 tons in six months) at a total cost for repairs and labor of 1.9 cents per ton. In loading coal the cost per ton is even less. One coal mine using Myers-Whaley Shovels for past two years (now has eleven) says they have not replaced a single gear in that time.



Application

M-W Machines can be depended upon for loading large continuous tonnage in rooms; rapid advance of entries by quick loading out of same; rapid loading of rock in taking top or bottom; loading rock, clay, coal or any other material faster and more economically than any other way; loading in room necks, on curves or straight ahead. Reliable performance under most difficult conditions.



Operation of the Myers-Whaley Shoveling Machines

The Automatic Shovel

The "MYERS-WHALEY" IS A REAL SHOVELING MACHINE—with a large shovel actuated automatically to produce a motion very similar to hand shoveling and very efficient. The series of views on this page illustrate the shovel motion. The shovel is actuated by a crank rotating continuously in one direction, the rear end of the shovel being supported by rollers running in guide ways so as to impart the desired motion to the shovel.

Starting at top of page on left the pictures show the shovel starting into the material and taking a load, then lifting the load and transferring it to the inner shovel section, then the inner shovel tilts backward and delivers its load to the conveyor belt, after the material is discharged the inner shovel section returns to its place in the shovel and is ready for the next load stroke or cycle. This automatic taking of a load, lifting it and discharge is accomplished **13 times per minute** in the No. 4 size machine and 18 times per minute in the No. 3 size. This rapid operation with a moderate amount of material at each stroke results in **large capacity** and **small power consumption,** incidentally is responsible for **high efficiency** and **low upkeep cost.**

Myers-Whaley Shovels Give—

1st. Large capacity and economy.
2nd. Low cost of operation in **labor** and **power.**
3rd. Very low upkeep cost and minimum loss of operating time.
4th. Low depreciation. Machines nine years old still in efficient service.

General Features

Myers-Whaley Shoveling Machines effect large economy in a wide range of work. The machines will load any loose material. The limitations on the use of the machine are as follows:

1. Head room. The minimum height required from top of rails to roof is 4 ft.

2. Width of working places. The minimum width in which the Myers-Whaley Shovel can be used satisfactorily is 7 ft.

3. Grades. Myers-Whaley Shovel operates from the track and is, therefore, limited to grades not too steeply pitching. Machines have been known to work satisfactorily on grades up to 14%. Ordinarily speaking 10% should be considered a limiting grade.

4. Tracks. Machines are designed for operation on ordinary mine tracks, which should be built of sufficient weight rail and well constructed. Machines can be arranged to operate upon any track gauge 18" wide or wider.

5. Power. Machines can be equipped for operation under compressed air, minimum pressure 70 pounds per square inch, or for any commercial electric power. Electric drive is recommended where power is available.

6. Machines will handle any kind of material, pieces up to 28 inches in any one dimension.

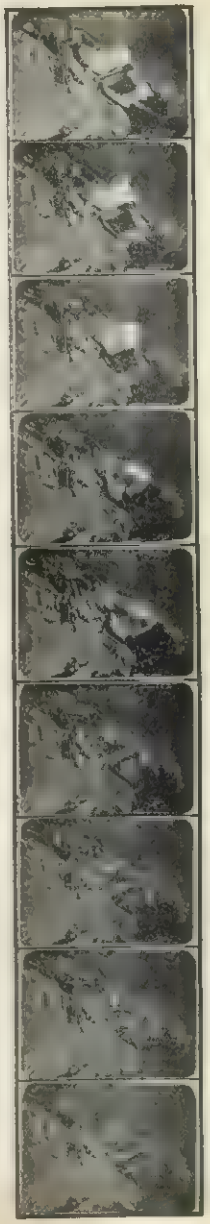
7. Machines are designed for loading into mine cars. Machines can load cars up to 6 ft. high as a maximum, and 12 ft. long.

8. Shovel is adjustable so that it can operate either on top of rail or 8 to 10 inches below it.

9. Material may be discharged immediately behind the machine or to one side within a distance of 6 ft. from the track centers.

10. Machine is self-propelled and operated by one man.

11. The shovel operates on either a smooth or rough bottom, or will spade into the material making its own bottom.



General Construction of Myers-Whaley Machines

MYERS-WHALEY SHOVELS are built for STRENGTH, DURABILITY, ECONOMY AND EFFICIENCY.

The best obtainable materials are used and the work is carefully followed and inspected throughout the course of construction. As a few indicative items we mention that practically all cast parts are of high grade steel. The main frame is a one piece steel casting.

All gears, except bronze spiral gears, are of steel with accurately cut teeth, and those gears subject to heaviest duty are hardened and heat treated. Gears are housed in oil-tight cases whenever possible.

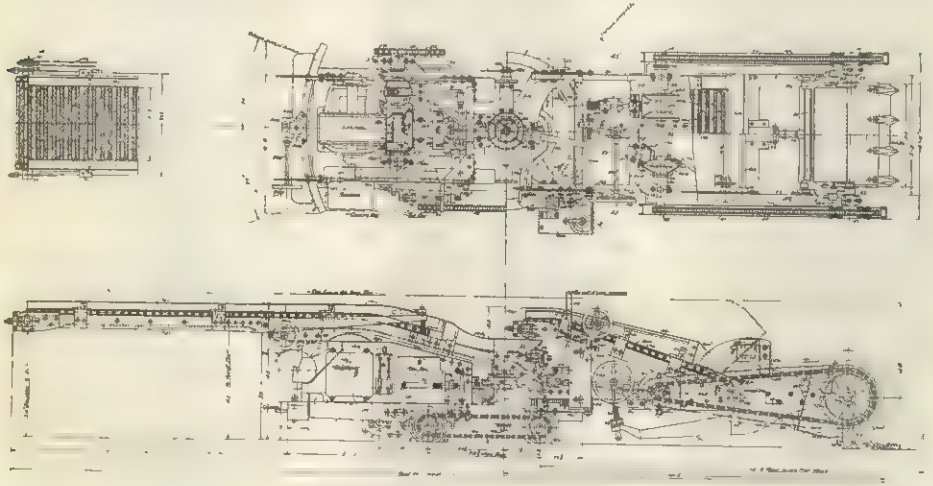
All chains are steel. The conveyor chain is a hardened steel roller chain with specially designed attachments. Drive chains are automobile type, finished nickel steel, and run on cut steel sprockets.

The conveyors are of a special type, designed for this service. The strain is entirely taken by hardened steel roller chains, the abrasion of material is taken by steel bars and leakage is prevented by the belt. The chains are fastened to the sides and the bars are bolted to upper surface of the belt.

The lubrication of all parts has been carefully and efficiently provided for.

Renewable brass linings are provided in all bearings.

In every other item of construction the same care and choice of material is exercised, resulting in a homogeneous machine, well designed, well built, and consistently reliable in all its parts.



General Arrangement of Special No. 3 Size Machine

SPECIFICATIONS

Special No. 3 Size Underground Machine

This machine is for use in mines or tunnels not less than 4 feet, 0 inches from rail to roof. The rear conveyor swings laterally and will load cars on same or parallel track.

Weight—About 13,500 pounds in working order.

Track Gauge—20 inches and over, using balance rails on gauge 40 inches or less.

Length—24 feet, 0 inches.

Width Over All—4 feet, 8 inches. (5'0" at operator's platform).

Height—3 feet, 9 inches.

Wheel Base—36¾ inches.

Reach—9 feet, 0 inches, to each side from center of track.

Width of Shovel—34 inches.

Power Consumption—About 10 H. P.

Motor 15 H. P. for any commercial electric service, or for compressed air.

Maximum Capacity—35 cubic feet per minute in loose material.

Shipping Weight—About 16,000 pounds, boxed for export.

Boxed for Export—3 cases, 108, 90 and 180 cubic feet—Total 378 cubic feet approximately.

No. 4 Size Underground Machine

This machine is for mines or tunnels 6 feet and over in height. The rear conveyor swings laterally and will load cars on same or parallel track.

Weight—About 18,500 pounds in working order.

Track Gauge—18 inches and over. Balance rails used on gauge less than 42 inches.

Length—22 to 26 feet, depending on length of mine car.

Width Over All—5 feet, 4½ inches.

Height—4 feet, 9 inches, and upwards—depending on height of mine car.

Wheel Base—42 inches.

Reach—10 feet to each side of center of track.

Width of Shovel—34 inches.

Power Consumption—About 12 H. P.

Motor—20 H. P. for any commercial electric current, or for compressed air.

Capacity—45 cubic feet per minute in loose material.

Shipping Weight—About 23,000 pounds, boxed for export.

Boxed for Export—In three Cases; 226, 186 and 137 cubic feet—Total 549 cubic feet, approximately.

Underground Loading With Myers-Whaley Shovels

The first Myers-Whaley Shoveling Machine was used in a coal mine at an early date, and while for a long time the market for machines in metal and rock mines took a large percentage of the Myers-Whaley Shovels built, Myers-Whaley shovels have been used for years in coal mines, driving entries, loading coal, cleaning up rock, etc.

The effectiveness of the machine depends upon the proper layout of the mine so as to afford sufficient working places and tonnage, and upon the proper preparation of the coal, proper track arrangements, and transportation. The coordination of these factors results in satisfactory operation.

The Myers-Whaley Company has made a study of the application of shoveling machines to coal mine work, and is in position to give advice in connection therewith.

Myers-Whaley Shovels in coal will average a ton of run of mine coal per minute, and the method of arriving at the practical tonnage to be secured per day in any operation is to analyze the local conditions, facilities for handling cars, layout of the mine, and method of shooting. This has usually to be done for each individual operation. We take pleasure in giving all information in this connection and same entails no obligation.

In considering machines for use in coal mines certain essential data as listed below should be supplied us.

In addition to the loading of coal in coal mines, the Myers-Whaley shovel is proving very useful in thin coal mines for loading the rock which it is necessary to take in driving entries. This rock may be either taken out of the top of the entry or on the bottom. In either case Myers-Whaley Shovels load same at greatly increased speed and at less than half the cost of hand loading.

Special No. 3 Size Machine

Example of Tonnage Loading

Performance Data

Record of coal loaded with a Myers-Whaley Shovel in a Kentucky Mine, from August 6th to September 22nd, 1924, (Owing to market conditions, mine operated only 22 shifts during this time) as shown by tipple-weight sheets. Crew—One Operator—One Helper—4 Ton Cars.

Aug	6	202,800 lbs	101.40 tons
Aug	8	389,300 lbs	194.65 tons
Aug	11	42,400 lbs	210.20 tons
Aug	13	276,100 lbs	138.05 tons
Aug	15	339,700 lbs	169.85 tons
Aug	18	386,400 lbs	193.20 tons
Aug	20	453,700 lbs	226.85 tons
Aug	23	397,200 lbs	198.60 tons
Aug	25	358,[illegible] lbs	179.00 tons
Aug	28	417,300 lbs	208.65 tons
Aug	30	632,300 lbs	316.15 tons
Sept	2	178,[illegible]0 lbs	89.05 tons
Sept	4	603,[illegible]0 lbs	301.85 tons
Sept	6	437,[illegible]0 lbs	218.40 tons
Sept	10	430,[illegible]0 lbs	215.05 tons
Sept	11	294,000 lbs	147.00 tons
Sept	13	323,500 lbs	161.75 tons
Sept	15	[illegible]0 lbs	287.50 tons
Sept	17	288,100 lbs.	144.05 tons
Sept	18	465,700 lbs	232.85 tons
Sept.	20	651,700 lbs.	325.85 tons
Sept.	22	636,100 lbs.	318.05 tons
	Total for Period	9,157,000 lbs.	4,578.50 tons
	Average Daily Loading		208.11 tons

Guarantee

THE MYERS-WHALEY COMPANY fully guarantees these machines as to material and workmanship, and any parts proving defective within one year after shipment will be replaced free of charge at Knoxville, Tenn. This does not cover breakage caused by lack of attention or carelessness on the part of operator, nor does it cover natural wear and tear.

Information Requested

Width of entries?..... Rooms?.....
Thickness of Seam—
Minimum?.. Maximum?.. General Average?..
Partings of Impurities—
How many?.... Thickness?... Location?....
Tracks—Gauge? .....
Number and location in working places.....
Working places to dip or rise?.....
What is the degree of pitch?.....
Type of cutting machine used?.....
Power—Air or electricity?.. .....Voltage?.....
Coal—Hard or Soft?..... .....
Car Width?... Length?... Height Above Rail?...
Capacity? .....

Wm. Rogers & Son

"THE BEST AT THE PRICE"

"Reinforced Plate," or an Extra Deposit of Silver, where the Most Wear Comes

MAYFAIR

Gray or Bright Finish

Heavy Plate

Dessert Forks
12 in unlined box, $7.50 dozen

Medium Forks
12 in unlined box, $7.92 dozen

Tea Spoons
12 in unlined box
$3.96 dozen

Dessert Spoons
12 in unlined box, $7.50 dozen

Table Spoons
12 in unlined box, $7.92 dozen

Triple Plate

Medium Knives or Forks, Hollow Handle ..... $33.40 doz.
No. 59 Medium Knives, Hollow Handle, Stainless Steel Blade ..... 27.26 "
Dessert Knives or Forks, Hollow Handle ..... 22.38 "
No. 51 Dessert Knives, Hollow Handle, Stainless Steel Blade ..... 26.64 "
Breakfast Knives, Hollow Handle ..... 23.10 "
Packed 6 in lined box

Medium Knives or Forks, Solid Handle ..... $9.58 doz.
No. 58 Medium Knives, Solid Handle, Stainless Steel French Blade ..... 17 10 "
No. 78 Medium Knives, Solid Handle, Stainless Steel Citrelet Blade ..... 16 64 "
Dessert Knives, Solid Handle ..... 9 36 "
Breakfast Knives, Solid Handle, Cinetry and Swaged ..... 9 60 "
Packed 6 in unlined box

Illustrations actual size. Dessert Knives shown

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

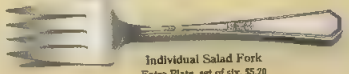
MAYFAIR

Gray or Bright Finish

Ice Tea Spoon
Packed 12 in unlined box, Extra Plate, per doz., $7.28

Bouillon Spoon
Extra Plate, set of six, $4.94

Butter Spreader
Extra Plate, set of six, $4.64



Individual Salad Fork
Extra Plate, set of six, $5.20

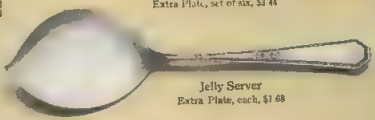
Orange Spoon
Extra Plate, set of six, $3.34

Fruit Knife
Solid Steel, Triple Plate, set of six, $3 76

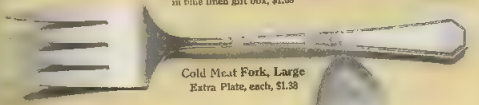
Butter Knife
Packed 12 in unlined box, per doz., $7.92
Packed 1 in blue lined gift box " " 9.58
Extra Plate

Oyster Fork
Extra Plate, set of six, $3 44

Sugar Shell
Packed 12 in unlined box.....per doz., $7 50
Packed 1 in blue lined gift box " " 9.16
Extra Plate
No. 133 Set, Butter Knife and Sugar Shell in blue lined gift box, $1.68

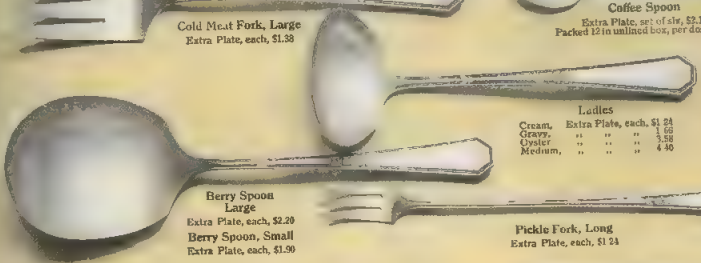


Jelly Server
Extra Plate, each, $1 68



Cold Meat Fork, Large
Extra Plate, each, $1.38

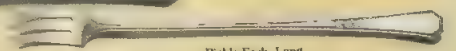
Coffee Spoon
Extra Plate, set of six, $2.14
Packed 12 in unlined box, per doz., $3.96



Ladles

Cream,	Extra Plate, each,	$1 24
Gravy,	" " "	1 66
Oyster	" " "	3.58
Medium,	" " "	4 46

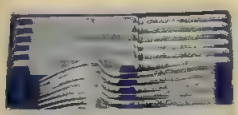
Berry Spoon
Large
Extra Plate, each, $2.20
Berry Spoon, Small
Extra Plate, each, $1.90



Pickle Fork, Long
Extra Plate, each, $1 24

(ne-half size

Illustrations of sets, about one-fourth actual size



No. 500 Set, in blue lined gift box, $8.74
6 Solid Handle Medium Knives and 6 Flat Forks
No. 504 Dessert Knives and Forks, $8.44
No. 500/4 with No. 48 Stainless Steel Knives, $12.69
No. 500/7 with No. 78 Stainless Steel Knives, 12.38

No. 1 Child's Set, in blue lined gift box, $2.20
Child's Flat Handle Knife, Fork and Spoon

All Fancy Pieces in Blue Lined Gift Boxes

No. 702 Set, in blue lined gift box, $15.92
6 Hollow Handle Medium Knives and 6 Flat Forks
No. 703 Dessert Knives and Forks, $15.36

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

THE BEST AT THE PRICE"

MAYFAIR Gray or Bright Finish

No. 713 Blue Display Case, 26 pieces $28.45

Blue Velvet Lined. Cover folds under, raising back of case which shows off ware to best advantage. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Hollow Handle Medium Knives, 1 Butter Knife, 1 Sugar Shell.

No. 712, same as above, but with Solid Handle Knives $21.50

No. 795 Chest, 40 pieces $50.86

High Grade Mahogany Finish Chest. Blue Velvet Lined. Knives go in rack in cover. Contains 6 Hollow Handle Medium Knives, 6 Medium Forks, 6 Individual Salad Forks, 6 Tea Spoons, 6 Dessert Spoons, 6 Table Spoons, 1 Sugar Shell, 1 Butter Knife, 1 Berry Spoon, 1 Cold Meat Fork, 1 Long Pickle Fork, 1 Gravy Ladle, 1 Cream Ladle.

No. 794, same as above, but with Solid Handle Knives $43.90

No. 752 "Elite" Service Case, 26 pieces... $41.90

"Elite" Blue Leatherette, Blue Sateen and Velvet Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Solid Handle Medium Knives, 1 Butter Knife, 1 Sugar Shell.

No. 753, same as above, but with H. H. Knives, $24.50

No. 740 Case, 26 pieces $18.52

Blue Leatherette Compact Case, Blue Lined. Contains 6 Solid Handle Medium Knives, 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shel.

No. 741, same as above, but with Hollow Handle Knives $25.48

No. 783 Chest, 26 pieces $28.40

"Elite" Blue Leatherette Chest, Blue Velvet Lined. Contains 6 Hollow Handle Medium Knives, 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell.

No. 782, same as above, but with Solid Handle Knives $21.44

Illustrations of chests and cases, about one-fifth actual size

No. 766 Open Stock Case, 77 pieces $78.00

Blue Satin and Velvet Lined. Makes a splendid window or counter display. Separate articles may be sold out of the chest. Boxes are furnished for all pieces. Contains 12 Tea Spoons, 6 Dessert Spoons, 3 Table Spoons, 6 Medium Forks, 6 Solid Handle Medium Knives, 6 Butter Spreaders, 6 Ind. Salad Forks, 1 Sugar Shell, 1 Butter Knife, 1 Cream Ladle, 1 Gravy Ladle, 1 Berry Spoon, 1 Cold Meat Fork, 1 Long Pickle Fork, 1 Tomato Server, 1 Jelly Server, 1 Hollow Handle Pie Server, 12 Piece Hollow Handle Bird Set.

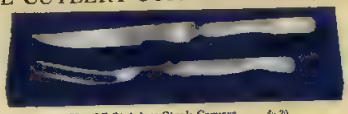
No. 767, same as above, but with Hollow Handles Knives $84.88

Wm. Rogers & Son

THE BEST AT THE PRICE"

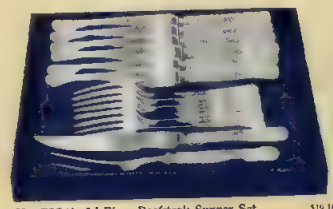
STAINLESS STEEL CUTLERY COMBINATIONS, MAYFAIR PATTERN

Also furnished in La France and Lincoln Patterns



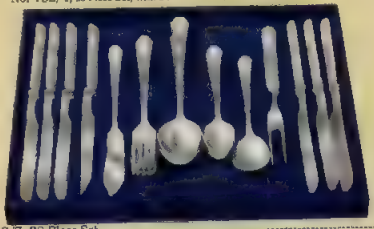
Illustrations of cases about one-fifth actual size

No. 95 Stainless Steak Carvers. $5.20
5⅛ Inch Blade, in Blue Lined Gift Case



No. 722/4, 14-Piece Beefsteak Supper Set. . . $14.10
In Blue Elite Case, Blue Lined, Contains 6 Medium Knives, Stainless Steel French Blade, 6 Medium Forks and Steak Carvers.
No 722/7, 14 Piece Set, with **Stainless Knives,** Cimeter Blade, $18.74

No. 752/7 Elite Service Case $21.10
Blue Elite Case, Blue Lined, Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Medium Knives, **Stainless Steel** Cimeter Blade, Butter Knife and Sugar Shell.
No. 752/4, 26-Piece Set, with **Stainless Knives,** French Blade $21.35



No. 742/7, 28-Piece Set $26.26
In Blue Elite Case, Blue Lined Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Knives, **Stainless Steel** Cimeter Blade, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell and Steak Carvers.
No. 742/4, 28-Piece Set, with **Stainless Knives,** French Blade.. . . . . $26.40

MEDIUM KNIVES
with Stainless Steel Cimeter Blades
No. 78 Mayfair (Illustrated) $16.64 doz
No. 72 La France 16.64 "
No. 71 Lincoln 16.64 "

MEDIUM KNIVES
with Stainless Steel French Blades
No. 48 Mayfair (Illustrated). $27.16 doz.
No. 47 La France 17.16 "
No. 41 Lincoln 17.16 "

Wm. Rogers & Son

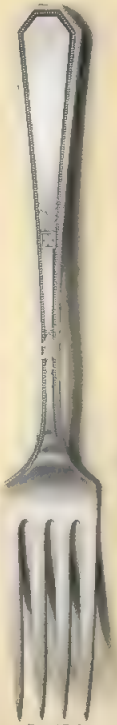
"THE BEST AT THE PRICE"

"Reinforced Plate," or an Extra Deposit of Silver, where the Most Wear Comes

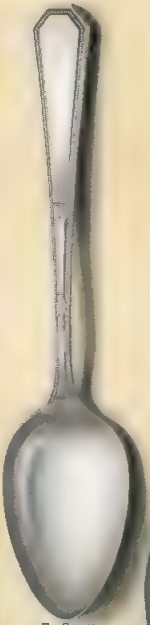
MAYFAIR

Gray or Bright Finish

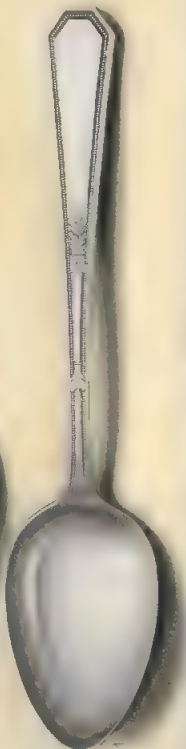
Heavy Plate



Dessert Forks
12 in unlined box, $7.50 dozen
Medium Forks
12 in unlined box, $7.32 dozen



Tea Spoons
12 in unlined box
$3.96 dozen



Dessert Spoons
12 in unlined box $7.50 dozen
Table Spoons
12 in unlined box, $7.32 dozen

Triple Plate

Medium Knives or Forks, Hollow Handle	$23.40 doz.
No. 50 Medium Knives, Hollow Handle, Stainless Steel Blade	27.26 "
Dessert Knives or Forks, Hollow Handle	22.88 "
No. 51 Dessert Knives, Hollow Handle, Stainless Steel Blade	26.64 "
Breakfast Knives, Hollow Handle	23.10 "
Packed 6 in lined box	

Illustrations actual size. Dessert Knives shown

Medium Knives or Forks, Solid Handle	$9.48 doz.
No. 48 Medium Knives, Solid Handle, Stainless Steel Pearl Blade	17.16 "
No. 78 Medium Knives, Solid Handle, Stainless Steel Cimeter Blade	16.64 "
Dessert Knives, Solid Handle	9.36 "
Breakfast Knives, Solid Handle, Cimeter and Swaged	9.68 "
Packed 6 in unlined box	

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"

MAYFAIR

Gray or Bright Finish

Ice Tea Spoon
Packed 12 in unlined box, Extra Plate, per doz., $7.28

Bouillon Spoon
Extra Plate, set of six, $4.94

Butter Spreader
Extra Plate, set of six, $4.64

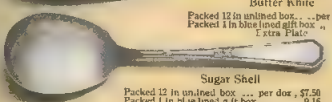
Individual Salad Fork
Extra Plate, set of six, $5.30

Orange Spoon
Extra Plate, set of six, $3.34

Fruit Knife
Solid Steel, Triple Plate, set of six, $3.76

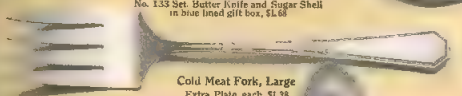
Butter Knife
Packed 12 in unlined box. . . per doz., $7.92
Packed 1 in blue lined gift box " " 9.58
Extra Plate

Oyster Fork
Extra Plate, set of six, $3.44



Sugar Shell
Packed 12 in unlined box . . . per doz , $7.56
Packed 1 in blue lined g ft box " " 9.16
Extra Plate
No. 133 Set. Butter Knife and Sugar Shell in blue lined gift box, $1.68

Jelly Server
Extra Plate, each, $1.68



Cold Meat Fork, Large
Extra Plate, each, $1.38

Coffee Spoon
Extra Plate, set of six, $2.14
Packed 12 in unlined box, per doz., $3.96

Ladies

Cream,	Extra Plate, each,	$1 24
Gravy,	" " "	1 65
Oyster,	" " "	3.58
Medium,	" " "	4.40

Berry Spoon
Large
Extra Plate, each, $2.20

Berry Spoon, Small
Extra Plate, each, $1.90

Pickle Fork, Long
Extra Plate, each, $1.24

One-half size

Illustrations of sets, about one-fourth actual size

No. 500 Set, in blue lined gift box, $8.74
6 Solid Handle Medium Knives and 6 Flat Forks
No. 504 Dessert Knives and Forks, $8.44
No. 500/4 with No. 48 Stainless Steel Knives, $12.60
No. 500/7 with No. 78 Stainless Steel Knives, 12.28

No. 1 Child's Set, in blue lined gift box, $2 20
Child's Flat Handle Knife, Fork and Spoon

All Fancy Pieces in Blue Lined Gift Boxes

No. 702 Set, in blue lined gift box, $15.92
6 Hollow Handle Medium Knives and 6 Flat Forks
No. 703 Dessert Knives and Forks, $15.30

26

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

THE BEST AT THE PRICE"

MAYFAIR Gray or Bright Finish

No. 713 Blue Display Case, 26 pieces.. $28.46

Blue Velvet Lined. Cover folds under, raising back of case which shows off ware to best advantage. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Hollow Handle Medium Knives, 1 Butter Knife, 1 Sugar Shell.

No. 712, same as above, but with Solid Handle Knives $21.50

No. 795 Chest, 40 pieces $50.86

High Grade Mahogany Finish Chest Blue Velvet Lined. Knives go in rack in cover. Contains 6 Hollow Handle Medium Knives, 6 Medium Forks, 6 Individual Salad Forks, 6 Tea Spoons, 6 Dessert Spoons, 3 Table Spoons, 1 Sugar Shell, 1 Butter Knife, 1 Berry Spoon, 1 Cold Meat Fork, 1 Long Pickle Fork, 1 Gravy Ladle, 1 Cream Ladle.

No. 794, same as above, but with Solid Handle Knives $43.90

No. 7-2 "Elite" Service Case, 26 pieces .. $1..6

"Elite" Blue Leatherette, Blue Sateen and Velvet Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Solid Handle Medium Knives, 1 Butter Knife, 1 Sugar Shell.

No. 753, same as above, but with H. H. Knives, $24.50

No 740 Case, 26 pieces $18.52

Blue Leatherette Compact Case. Blue Lined. Contains 6 Solid Handle Medium Knives, 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell.

No. 741, same as above, but with Hollow Handle Knives $25.46

Illustrations of chests and cases, about one-fifth actual size

No. 783 Chest, 26 pieces $26.40

"Elite" Blue Leatherette Chest, Blue Velvet Lined. Contains 6 Hollow Handle Medium Knives, 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell.

No. 782, same as above, but with Solid Handle Knives $21.44

No. 766 Open Stock Case, pieces $78.00

Blue Satin and Velvet Lined. Makes a splendid window or counter display. Separate articles may be sold out of the chest. Boxes are furnished for all pieces. Contains 12 Tea Spoons, 6 Dessert Spoons, 3 Table Spoons, 6 Medium Forks, 6 Solid Handle Medium Knives, 6 Butter Spreaders, 6 Ind. Salad Forks, 1 Sugar Shell, 1 Butter Knife, 1 Cream Ladle, 1 Gravy Ladle, 1 Berry Spoon, 1 Cold Meat Fork, 1 Long Pickle Fork, 1 Tomato Server, 1 Jelly Server, 1 Hollow Handle Pie Server, 1 2-Piece Hollow Handle Bread Set.

No. 767, same as above, but with Hollow Handle Knives $84.98

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

THE BEST AT THE PRICE"

STAINLESS STEEL CUTLERY COMBINATIONS, MAYFAIR PATTERN

Also furnished in La France and Lincoln Patterns

Illustrations of cases, about one-fifth actual size

No. 95 Stainless Steak Carvers. . . .$5.20

5½ inch Blade, in Blue Lined Gift Case

No. 722/4, 14-Piece Beefsteak Supper Set . $19.10

In Blue Elite Case, Blue Lined. Contains 6 Medium Knives, Stainless Steel French Blade, 6 Medium Forks and Steak Carvers

No. 722/7, 14-Piece Set, with **Stainless Knives,** Cimeter Blade, $18.74

No. 752/7 Elite Service Case $31.10

Blue Elite Case, Blue Lined, Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Medium Knives, **Stainless Steel** Cimeter Blade, Butter Knife and Sugar Shell.

No. 752/4, 28-Piece Set, with **Stainless Knives** French Blade $21.35

No. 742/7, 28-Piece Set $28.25

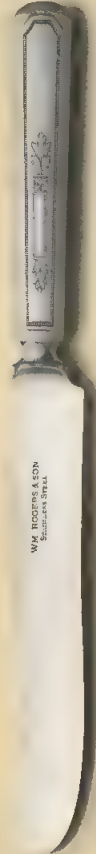
In Blue Elite Case, Blue Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Knives, Stainless Steel Cimeter Blade, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell and Steak Carvers.

No. 742/4, 28-Piece Set, with **Stainless Knives,** French Blade $26.60

MEDIUM KNIVES

with Stainless Steel Blades

No. 78 Mayfair (Illustrated) $16.64 doz.
No. 72 La France 16.64 ,,
No. 71 Lincoln 16.64 ,,



MEDIUM KNIVES

with Stainless Steel Blades

No. 48 Mayfair (Illustrated) $17.16 doz.
No. 42 La France 17.16 ,,
No. 41 Lincoln 17.16 ,,

INTERNATIONAL SILVER CO.

Ballyhoos That Bring Business

Outdoor Stunts Attract the Towns Attention

THE ballyhoo is one of the exploitation mediums through which you may bring word of your attraction directly to the people of your city. In some other manifestations of showmanship it is necessary for the public to come to you—or at least, to your advertisement. But the "bally" carries the battle into the enemies' territory

There are any number of ways in which to publicize your showing of "Broken Laws" through ballyhoos. And those that cover the most territory are bound to be most effective. Therefore it is recommended that you consider the mileage covered by taxicabs.

It will be a simple matter to arrange a tie-up with the local cab company whereby the spare tire on the rear of each cab may carry a card. One way of wording it might be: "Our Drivers Obey the Speed Laws—See the Result of 'Broken Laws' at the City Theatre."

The same idea may be used in a civic tie-up to advertise your show on every corner where there is a traffic semaphore. The thought woud be the same and it would serve the double purpose of impressing folks with the importance of the traffic laws —and the importance of seeing "Broken Laws."

If there is a garage in your town that makes a business of hauling in stalled or wrecked cars, it will also be simple to arrange for each of their emergency cars to carry appropriate signs.

There are many more elaborate ideas that may be worked out—and they are all sure attention attractors. But the ideas that are simple and inexpensive are generally the most effective. For instance the old idea of tags, throwaways, bell hangers have boosted business for many another showing—and will do so for yours.

Another way to exploit your showing of "Broken Laws" will be through a tie-up with some topic of local importance. It should be possible to arrange with the papers to carry the caption "Broken Laws" on every story of infringements of the law

The more thought you give to publicizing your picture—the greater will be the gross at the pay-box.

An atmosphere picture from F. B. O.'s "Broken Laws" which also may be used in window display tie-ups. It is Still No. 64.

Local Tie-Ups Win Additional Windows

Don't Forget the Local Stores Are Institutions of the Town

IT sometimes happens that the showman secures advantages from local tie ups that are equal to those obtained through cooperation with national advertisers.

Therefore it is wise to consider every tie-up picture with an eye for cooperation of local character. For instance, while no National Tie Up has been obtained on cigarettes there are a number of stills such as No. 83 which will fit in admirably with the window display of your local tobacconist.

The particular still referred to features a special brand of smokes, but it may be used with equal effectiveness in a general way, or in a specific tie-up with any brand desired.

There are a number of tie-ups possible with toy stores, dealers in children's apparel, shoes, and so on. Look at still No. 68. Is it not a corker for use with window displays of dolls, kids slippers, pajamas, dressing robes and even a general tie-up on "Do Your Christmas Shopping Early"?

NO. 81, beside being a good atmosphere still, may be used in connection with an automobile tie-up—either for machines or motor accessories.

A picture such as still No. 2 is certainly sufficient to secure the help through window displays, of any merchant selling shoes—whether they be for children or grown-ups. And No. 19 is good for tableware, interior decorations, house-furnishers of a great variety of windows.

The Auto Vacuum Ice Cream Freezer

Beats Alaska For Keeping You Cool

THE story of the Klondike—in the land of the Yukon—as told in "Chechahcos," so strongly suggests the idea of keeping cool that it is extremely doubtful if, anywhere in the world, there could be a better exploitation tie-up for you than that you can get from the Auto Vacuum Freezer Company through their

'CHECHAHCOS'

WINDOW DISPLAYS

All you have to do is mark the spot in the "Chechahcos" coupon and the big co-operative merchandising ball will start rolling. You will then reap the benefit of all the national advertising on the greatest ice cream freezer in the world.

Auto Vacuum Freezer Co., Inc.

220 West 42nd Street New York City

Still No. 87 ties-up well with displays of perfumes, atomizers or other articles having feminine appeal. It is from a scene in F. B. O.'s photoplay, "Broken Laws."

No. 114 may be of service in securing the window of an establishment wishing to sell any sort of hair-dressing. There are a series of similar pictures and every one of them will arouse interest in the dealer's merchandise and the picture you are showing.

THERE are many pictures that may be used as general tie-ups. Look at No. 16 and think of how many different ways it may be used. The idea of gifts — birthdays — anniversaries, and again the Christmas thought. The same applies to No. 15, which has the child appeal.

If you play the picture around the Christmas season there are a number of stills showing Christmas trees, toys, and the usual atmosphere of celebration. You should make use of every one of these. They are all available, and they will all help to increase the box-office gross.

Stills like Nos. 51 and 13 may be used in connection with children's apparel. And don't forget that most folks are as foolish over their kids as the heroine of "Broken Laws" was over her Bobby. They will stop to look at children's pictures, and will buy the product with which such stills are tied-up.

You may cooperate in an "own your own home" campaign, with stills Nos. 41, 72, 14 and similar ones. And can boost attendance at your theatre at the same time.

Inject a bit of comedy in your windows with stills like No. 84. They are good for a laugh, and will make folks curious to see the show.

National Advertisers Who Will Furnish Window Display Material For Tie-Ups on "Broken Laws"

WHEN you book "Broken Laws" call immediately on all merchants carrying the nationally known products listed below. They will all lend hearty cooperation in a mutual publicity campaign conducted through their windows. Then write Exhibitors Trade Review stating your playdates and the number of sets of window display material you require on each National Tie-Up. Your communication will receive our prompt attention.

AUTO-STROP SAFETY RAZOR CO.
NEW YORK CITY

Product: Safety Razors
Display Material: Window Cards
Tie-Up: Druggists, Department Stores, Hardware Stores

THE BORDEN COMPANY
NEW YORK CITY

Product: "Eagle Brand" Milk
Display Material: Cards, Posters
Tie-Up: Groceries, Department Stores

CHERAMY, INC.
NEW YORK CITY

Product: "Cappi" Cosmetics
Display Material: Cards, Posters, Dummies
Tie-Up: Specialty Shops, Druggists, Department Stores

FINE AND LEVY, INC.
NEW YORK CITY

Product: "Sure-Fit" Caps
Display Material: Cards, Posters
Tie-Up: Hatters, Clothiers, Department Stores

FONTANIS, INC.
NEW YORK CITY

Product: Perfumes and Toilet Requisites
Display Material: Cards, Posters
Tie-Up: Perfumers, Druggists, Specialty Shops, Department Stores

BEN WEINER & CO.
NEW YORK CITY

Product: "Penrod" Clothes
Display Material: Cut-Outs, Posters, Cards
Tie-Up: Boys' Wear

FRANKLIN KNITTING MILLS
NEW YORK CITY

Product: "Fashionknit" Neckwear
Display Material: Cards, Posters
Tie-Up: Haberdashers, Department Stores

WM. P. GOLDMAN & BROS., INC.
NEW YORK CITY

Product: "G. G. G." Clothes
Display Material: Posters, Cards
Tie-Up: Clothiers, Haberdashers, Department Stores

LEHN AND FINK, INC.
NEW YORK CITY

Product: "Pebeco" Dentifrice
Display Material: Posters, Cutouts
Tie-Up: Druggists, Department Stores

MODEL BRASSIERE CO.
NEW YORK CITY

Product: "Model" (Criss-Cross) Brassieres
Display Material: Cards, Posters
Tie-Up: Specialty Shops, Department Stores, Women's Wear Shops

NEW YORK KNITTING MILLS
NEW YORK CITY

Product: "Nynit" Knitted Outerwear
Display Material: Posters, Cutouts
Tie-Up: Men's Wear, Women's Wear and Children's Wear Shops, Department Stores

FRANK KATZ HAT CO.
NEW YORK CITY

Product: "Society Club" Hats
Display Material: Posters, Cards
Tie-Up: Hatters, Department Stores, Men's Wear Shops

If you were one of the more than 9200 Exhibitors who played Mrs. Wallace Reid in "HUMAN WRECKAGE", you will be able to understand and appreciate the immensity of her second big production,

"Broken Laws"

when we tell you that it is a bigger picture than "Human Wreckage". Outside of "The Birth of A Nation", no picture in history had a bigger play than "Human Wreckage". We predict even a bigger play for "BROKEN LAWS".

A tremendous Nation wide exploitation campaign in work now for more than six months is only one of the giant features behind this second big picture—Distributed thruout the world by

FILM BOOKING OFFICES

723 Seventh Ave. N. Y. City
Exchanges Everywhere

Brilliant cast includes Percy Marmont
Adapted by Marion Jackson & Bradley King

Story by Adela Rogers St. John
Directed by R. William Neill

America's Foremost Celebrated Line of Seneca Cameras at Factory Prices

A Camera of Every Size and Description. A Real Value in Any Camera at Prices Quoted. There are many Seneca Cameras, fact they cover the entire field of Photographic Art. For the adult beginner there is a fixed focus folding camera that renders excellent results and is easily manipulated. For the school-boy or school-girl there is the Scout, a box camera. Its operation is simplicity itself. Beginning with these two instruments, we pass on to a wide range of Senecas adapted to various purposes, until we come to the reflecting camera, the highest type of hand camera. Peruse these pages and you will be sure to see some particular Seneca that appeals to you and answers your purpose.

The 2, 2A, 2C, 3 and 3A Box Scouts

Takes any standard make film cartridge.

The velvet-lined Scout is a rugged camera that exactly suits the boy or girl and young people. These sturdy little cameras take small good pictures and are so easy to operate that satisfactory results can be had from the first time you press the button. Pictures are easy and certain with the Scout series. There is no distance to judge when using the Meniscus Achromatic lens as fixed focus is used, but accessories and points for the Scout are the finder, which shows how much to see the time exposure, and for instantaneous work, and press the lever. The choice are adjusted for fixed focus and are always ready for those pictures. These cameras are strictly modern, and are made in accordance with the latest practice and with such features as are found in cameras costing many times the price. The cameras for which we can be furnished speed and time work, as well as the ordinary snapshot. The cameras are built by skilled workmen who turn out the highest grade instruments at reasonable prices. They are made by the same workmen who turn out the higher priced Senecas, and are guaranteed similarly as to quality of workmanship and material. All the parts of the camera are made of brass, nickel plated. The finders are accurately and compactly adjusted, so that the entire field will appear in the picture. The camera can be loaded and unloaded in daylight. The method of loading allows the entire film chamber to be removed, and every step of the operation to be visible to the eye and easy to perform. The Scout is the lightest, most compact reliable and substantial Box Camera on the market.

PRICES ON CAMERAS AND SUPPLIES

	No. 2	No. 2A	No. 2C	No. 3	No. 3A
	2 1/2 x 2 1/2	2 1/2 x 4 1/4	2 1/2 x 4 1/4	3 1/4 x 5 1/4	3 1/4 x 5 1/2
	No. 00	No. 01	No. 02	No. 03	No. 04
Seneca Box Scout (choice of five sizes), each	$4.10	$5.80	$7.35	$7.85	$7.95
Roll Film Number	360 (120)	348 (116)	380 (130)	372 (124)	375 (125)
Price per roll (6 exposures), each	$0.43	$0.51	$0.77	$0.77	$0.94
Seneca Portrait Attachment, each	.75	.75	.75	.75	.75

Prices include excise war tax

The No. 2 Seneca Folding Scout

Takes any standard make film cartridge.

The No. 2 Folding Scout makes sharp pictures 2 1/4 x 3 1/4 inches. It is easy to load, simple to use and light to carry. A big feature of this camera is its method of loading. The back comes entirely off. The silver film to be inserted handily without danger of unrolling or fogging. The Seneca Automatic fixed focus device is one of the distinctive features of the Meniscus Achromatic model. This makes it unnecessary to estimate the distance for average snapshots. Focusing may be done for near or distant subjects. Better pictures generally are possible with the Rapid Rectilinear Lens. It has twice the speed of the Meniscus Achromatic.

Five speeds, 1/25, 1/50 and 1/100 second, Time and Bulb exposures are available with the Trio Shutter. The action is automatic—requires no setting.

The weight of the No. 2 Folding Scout is just 14 ounces—made possible by its aluminum body and wooden reinforcements. A durable covering of real grain waterproof leatherette assures long wear and handsome appearance. Metal parts are finished in crystal enamel, a finish usually found only on cameras of the highest grade. For the one who wants a simple, practical compact camera at a price easily within reach, the No. 2 Folding Scout will prove a satisfactory and capable companion.

Prices on Cameras and Supplies:

NO. 2 FOLDING SCOUT

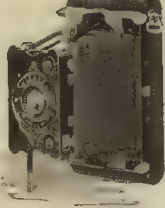
	2 1/4 x 3 1/4
With Meniscus Achromatic Lens, Trio Shutter, No. 90, each	$12.50
With Rapid Rectilinear Lens, Trio Shutter, No. 100, each	15.60
Roll Film No. 360 (120), 6 exposures, each	.43
Seneca Portrait Attachment each	.75

Prices include excise war tax

The Vest Pocket Seneca

"LITTLE INDIAN"

Takes any standard make film cartridge



The Vest Pocket Seneca is a practical little Camera combining simplicity, compactness and real picture-taking ability. It takes pictures measuring 1 3/4 x 2 1/2 inches. Getting good pictures with the Vest Pocket is easy. Open the protecting door, pull out the front which automatically locks in the correct position and the camera is ready for work. No focusing or estimating distances is necessary, every object six feet or more from the lens will be sharp and clear in the picture. A feature of the Vest Pocket is its ease of loading. The back can be removed and film inserted handily.

The f/7.5 and f/6.3 Anastigmat lenses produce excellent negatives even on gray days when the light is poor. Pictures made with these lenses can be enlarged without losing sharpness or detail.

The Vest Pocket is smoothly made of aluminum. The body is covered with black grain leather, the bellows is black and metal parts are highly polished, giving the Camera a trim, attractive appearance.

Prices on Cameras and Supplies.

VEST POCKET SENECA

	1 3/4 x 2 1/2
With Rapid Rectilinear Lens, Deltax or Marvel Shutter, No. 14, each	$14.05
With Anastigmat Lens, speed f/7.5, Deltax or Marvel Shutter, No. 15, each	16.75
With Anastigmat Lens, speed f/6.3, Deltax or Marvel Shutter, No. 16, each	23.90
Roll Film No. 331 (127), 8 exposures, each	.43
Black Leather Carrying Case, each	2.00
Seneca Portrait Attachment, each	.75

Prices include excise war tax

The No. 2 Seneca Sagamore

Takes any standard make film cartridge.

For one who wishes a handy, convenient and reliable outfit, suitable for all kinds of general work, at a small expense the No. 2 Sagamore is an exceptional value. This camera is as compact as a camera can be made and still work effectively. It is only six and one-half inches in length—its width is less than three inches—its thickness, one and a quarter inches. It occupies about as much room in your pocket as a good sized wallet, still it takes pictures 2 1/4 x 3 1/4 inches.

The No. 2 Seneca Sagamore is very substantially made. The body is entirely of special metal, selected for its weight and strength. A covering of real grain leather assures long wear. The one-piece front is formed of heavy gauge metal and operates on a broad nickeled track. This track holds it rigid to keep the lens in accurate alignment with the film.

Either the Seneca Deltax or Marvel Shutter is standard equipment with the Single Achromatic and Rapid Rectilinear Lenses. Both have fractional exposures of 1/25, 1/50 and 1/100 second besides the usual Time and Bulb exposures.

Prices on Cameras and Supplies:

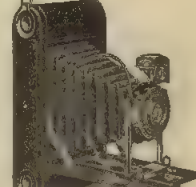
NO. 2 SAGAMORE

With Single Achromatic Lens, Deltax or Marvel Shutter, No. 130, each	$19.80
With Rapid Rectilinear Lens, Deltax or Marvel Shutter, No. 131, each	21.05
With f/7.5 Anastigmat Lens, Gundax or Marvel Shutter, No. 132, each	25.10
With f/7.5 Anastigmat Lens, Deltax or General Shutter No. 133, each	32.75
Roll Film, No. 360 (120), 6 exposures, each	.43
Black Leather Carrying Case, Push-lined, with strap, each	4.80
Seneca Portrait Attachment, each	.75

Prices include excise war tax

Roll Film Senecas

Takes any standard make film cartridge.



Roll Film Senecas have many exclusive features that not only add to their efficiency, but to their appearance as well. These popular models are favorites with the discriminating amateur by reason of their simplicity of operation and their ability to take satisfactory pictures. The body of this camera is made of high-grade aluminum and covered with real grain leather. All metal parts are finished in nickel and black enamel.

The Rapid Symmetrical Lens equipment is recommended for pictures under less favorable light conditions and for photographing architectural subjects.

A wide choice of shutters is given as indicated, having a range of exposures including 1/5, 1/25, 1/50, 1/100 second, bulb and time.

Prices on Cameras and Supplies:

	No. 1A	No.	No. 3A
	2 1/4 x 3 1/4	3 1/4 x 4 1/4	3 1/4 x 5 1/2
Roll Film Senecas, Meniscus Achromatic Lens, Deltax or Marvel Shutter, each	No. 31 $26.80	No. 40 $26.80	No. 41 $31.20
Roll Film Senecas, Rapid Symmetrical Lens, speed f/8, Deltax or Marvel Shutter, each	No. 33 $28.60	No. 42 $28.60	No. 43 $34.30
Roll Film Senecas Rapid Symmetrical Lens, speed f/8, Betax or Central Shutter, each	No. 35 $32.75	No. 44 $32.75	No. 45 $37.40
Roll Film Number	1 348 (116)	354 (118)	368 (122)
Price per roll (6 exposures), each	$0.51	$0.77	$0.94
Auto Seneca Portrait Attachment each	4.80	4.80	5.55
Black Leatherette carrying case, each	3.20	3.20	3.60
Portrait Attachment, each	.75	.75	.75

Prices include excise war tax

America's Foremost Celebrated Line of Seneca Cameras at Factory Prices

A Camera of Every Size and Description. A Real Value in Any Camera at Prices Quoted.

Seneca Folding Scout Cameras

Takes any standard make film cartridge.

These things account for the popularity of the Folding Scout Cameras—they are good looking instruments—they take excellent pictures—and the prices are right. The No. 2A and No. 3A Folding Scout offer the utmost in value and camera efficiency at an exceedingly low cost. They both are popular sizes too—the 2A takes pictures 2½x4¼ inches, the No. 3A takes pictures 3¼x5½ (post card) inches. The striking features of these models are the ease of loading simplicity of operation and the excellent pictures that may be obtained with them. On all models the back is removable, allowing film to be inserted handily and quickly. The bodies of these models are made of Aluminum with reinforced wooden sides. The makers them very strong and yet light in weight. The bodies are covered with real grain leatherett, which is waterproof and is quite durable than genuine leather. An exceptionally rapid front standard is a feature on the Folding Scout. This front is strongly made of heavy metal attached to a broad metal track and holds the lens in perfect alignment with the film. Tripod sockets are available for both horizontal and vertical pictures. The Meniscus models equipped with a universal focusing device make it unnecessary to focus the lens when snap-shots are taken in a hurry. Simply pull out the front standard until the indicator snaps into the focusing scale. The camera is ready for use. The Rapid Rectilinear Lens enables the use of a camera under a greater range of light conditions and gives better pictures generally. This is a double lens having one element in front and one in back of the shutter. With snapshots are possible on days when the sun is hardly strong enough to cast a shadow. Views of buildings and other subjects having a great number of straight lines are rendered without distortion. It has twice the speed of the Meniscus Achromatic Lens and gives negatives that allow enlargement to many times the original size. Either the Deltax or Marvel Shutter is standard equipment on this model. These shutters are automatic and permit Time, Bulb and Instantaneous exposures of 1/25, 1/50 and 1/100 part of a second. These cameras have the Seneca characteristic of simplicity, compactness and reliability and will prove an excellent value to the careful buyer.

PRICES OF CAMERAS AND SUPPLIES

	No. 2A	No. 2C	No. 3	No. 3A
	2½ x 4¼	2½ x 4¼	3¼ x 4¼	3¼ x 5½
Folding Scout, Meniscus Achromatic Lens, each.	No. 101	No. 102	No. 105	No. 104
Deltax or Marvel Shutter	$20.30	$22.40	$20.30	$27.20
Folding Scout, Rapid Rectilinear Lens, each	No. 1.5	No. 106	No. 107	No. 108
Deltax or Marvel Shutter	$23.40	$25.50	$23.40	$30.66
Roll Film Number	248 (116)	380 (120)	372 (124)	366 (122)
Price per roll, 6 exposures, each	$0.51	$0.77	$0.77	$0.94
Black Sole Leather Carrying Case, each	4.80	4.80	4.80	5.55
Black Leatherett Carrying Case, each	3.20	3.20	3.20	3.60
Seneca Portrait Attachment, each	.75	.75	.75	.75

Prices include excise war tax

The Seven-Five Folding Scout

Takes any standard make film cartridge.

The Seneca Seven-Five Folding is our regular Folding Scout model fitted with an *f*7.5 Anastigmat Lens and covered with genuine seal grain leather. The relation between the *f*7.5 and ordinary Symmetrical Lens is about 20% increase in light passed in the same shutter time. Pictures may be taken under light conditions where the Rapid Symmetrical objective would fail. The area used in the Seven-Five Folding Scout is a fully corrected Anastigmat. It gives flatness of field and critical definition. Amateur photographers will appreciate the added convenience of being able to have their choice of standard shutters fitted to the popular Seven-Five Scout. In selecting material for the Scout no pains have been spared to have it the best possible with the result that this instrument will look like new after long and continued use and handling. This instrument offers a wonderful value to the amateur who wants something better than the ordinary run of cameras.

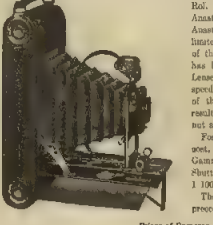
Prices of Cameras and Supplies

	No. 2A	No. 2C	No. 3	No. 3A
	2½ x 4¼	2½ x 4¼	3¼ x 4¼	3¼ x 5½
Seven-Five Folding Scout *f* 7.5, Lens Gammax or Marvel Shutter each	No. 110	No. 111	No. 112	No. 113
	$31.20	$34.30	$31.20	$38.00
Seven-Five Folding Scout, *f* 7.5 Lens Betax or General Shutter, each	No. 114	No. 115	No. 116	No. 117
	$32.70	$35.80	$32.70	$42.00
Roll Film Number	248 (116)	380 (120)	372 (124)	366 (122)
Price per roll, 6 exposures, each	$0.51	$0.77	$0.77	$0.94
Black Sole Leather Carrying Case each	4.80	4.80	4.80	5.55
Black Leatherett Carrying Case, each	3.20	3.20	3.20	3.60
Seneca Portrait Attachment, each	.75	.75	.75	.75

Prices include excise war tax

The Seven-Five Roll Film Seneca

Takes any standard make film cartridge.



The Seven-Five Roll Film Seneca is the regular Roll Film model fitted with a fully corrected *f*7.5 Anastigmat Lens in the standard sizes. The use of Anastigmat equipment has hitherto been somewhat limited on account of its price. Since the introduction of the Seven-Five Roll Film Seneca, this objection has been removed. The superiority of Anastigmat Lenses has long been acknowledged. The give speed and sharp clear pictures to t different margins of the film. Their unusual brilliancy produces a result suitable for subsequent enlargement—a feature not always possible with other types.

For the completion of maximum quality at minimum cost, the Seven-Five Roll Film Seneca is fitted with Gammax or Rex Marvel and Betax or Rex General Shutters. They have speed graduations from ½ to 1 100 part of a second, besides time and bulb exposures.

These cameras include every detail found in the preceding models of Rod Film Seneca.

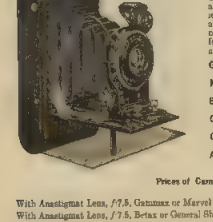
Prices of Cameras and Supplies

	No. 1A	No. 3	No. 3A
	2½ x 4¼	3¼ x 4¼	3¼ x 5½
Seven-Five Roll Film Seneca Anastigmat Lens, *f* 7.5 Gammax or Marvel Shutter, each	No. 51	No. 52	No. 53
	$37.55	$37.55	$42.05
Seven-Five Roll Film Seneca, Anastigmat Lens, *f* 7.5 Betax or General Shutter, each	No. 55	No. 56	No. 57
	$40.50	$40.50	$45.20
Roll Film Number	248 (116)	354 (118)	366 (122)
Price per roll, 6 exposures, each	$0.51	$0.77	$0.94
Black Sole Leather Carrying Case each	4.80	4.80	5.55
Black Leatherett Carrying Case, each	3.20	3.20	3.60
Portrait Attachment, each	.75	.75	.75

Prices include excise war tax

The No. 1 Seneca Sagamore

Takes any standard make film cartridge.



Most people like a camera that will go the way—small light compact proposition that they can carry with them. The Sagamore no. 1 comes just as small one-half inches from tip to tip, and weighs less than twenty ounces. It takes pictures 2½x3½ inches. The Sagamore body is formed from seamless, metal aluminum covered with the finest grade of Morocco leather. The one-piece metal front insures perfect alignment of the lens with the film and is absolutely necessary to have the pictures sharply focused. This feature is supplemented by a focusing lever which is an aid to microscopic definition.

Gammax Shutter—Speeds, 1/10, 1/25, 1/50, 1/100 second, Bulb and Time.

Marvel Shutter—Speeds, 1/25, 1/50, 1/100 second Bulb and Time

Betax Shutter—Speeds, 1/2, 1.5, 1/10, 1/25, 1/50, 1/100 second, Bulb and Time

General Shutter—Speeds, 1/10, 1/25, 1/50, 1/100, 1/200 second, Bulb and Time

Optimo Shutter—Speeds, 1/1, 1/5, 1/10, 1/25, 1/50, 1, 100, 1/200 second Bulb and Time

Acme Shutter—Speeds, 1, 1/2, 1/5, 1/25, 1/50, 1 100, 1/300 second, Bulb and Time

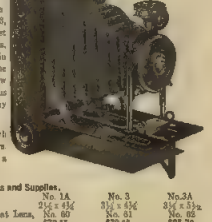
Prices of Cameras and Supplies

	2¼ x 3¼
With Anastigmat Lens, *f* 7.5, Gammax or Marvel Shutter, No. 119, each	$ 43.85
With Anastigmat Lens, *f* 7.5, Betax or General Shutter, No. 120, each	46.75
With Anastigmat Lens, *f*.6.3, Optimo or Acme Shutter, No. 122, each	60.10
With Anastigmat Lens, *f*.4.5, Optimo or Acme Shutter, No. 124, each	77.95
With Bausch & Lomb IIb Tessar, *f*.6.3, Optimo or Acme Shutter, No. 126, each	98.20
With Bausch & Lomb Ic Tessar, *f*.4.5, Optimo or Acme Shutter, No. 128, each	101.40
Roll Film, No. 360 (120), 6 exposures, each	.63
Black Leather Carrying Case, Plush-lined, with strap, each	4.80
Seneca Portrait Attachment, each	.75

Prices include excise war tax

The Six-Three Roll Film Seneca

Takes any standard make film cartridge.



Here is the master Roll Film model. A high grade Camera fitted with a fully corrected Anastigmat lens working at the extreme speed of *f*:6.3.

This Camera is furnished in three popular sizes the No. 1A taking pictures 2½x4¼ inches, the No. 3, 3¼x4¼ inches and the No. 3A 3¼x5½ inches (post card). Sixty per cent faster than the average lens, the *f*:6.3 Anastigmat shows to best advantage in taking pictures of rapid action. It will catch the athlete in mid-air or the auto racing to create new records. Working at the full aperture of *f*:6.3, this instrument will take pictures under practically any light conditions.

The Six-Three Roll Film Seneca is furnished with either the Optimo or the Acme high-speed shutters. Each of these work from Time to 1/300 part of a second and without jar at their greatest speed.

Prices of Cameras and Supplies.

	No. 1A	No. 3	No.3A
	2½ x 4¼	3¼ x 4¼	3¼ x 5½
Six-Three Roll Film Seneca, extra rapid Anastigmat Lens, Optimo or Acme Shutter, each	No. 60	No. 61	No. 62
	$79.15	$79.15	$85.70
Six-Three Roll Film Seneca, Bausch & Lomb Tessar Ser. IIb, *f*:6.3 Anastigmat Lens Optimo or Acme Shutter, each	No. 63	No. 64	No. 65
	$101.40	$101.40	$110.85
No 4 Tessar Lens on No. 1A No. 4 Lens on No. 3, No. 5 Lens on No. 3A Roll Film Seneca.			
Roll Film Number	248 (116)	354 (118)	366 (122)
Price per roll, 6 exposures, each	$0.51	$0.77	$0.94
Black Sole Leather Carrying Case, each	4.80	4.80	5.55
Portrait Attachment each	.75	.75	.75

Prices include excise war tax

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Seneca Camera No. 8

For Plates or Film Packs

Details

Camera Box—Ebony finish, corners dovetailed, covered with genuine leather, walnut grain. **Camera Bed**—Solid mahogany, ebony finish, attached to camera with improved nickel plated piano hinge. **Metal Parts**—Brass, handsomely nickel plated. **Bellows**—Black Russia leather, lined with grosgrain cloth. **Rack and Pinion**—For fine focusing with locking device. **Front**—Rising, falling and sliding. **Lens Board**—Removable. **Swing**—Back and Bed. **Back**—Revolving, with spring actuated ground glass panel for focusing. **View Finder**—Brilliant, reversible, metal bound and hooded. **Tripod Sockets**—Two (one for bed of camera). Price includes Camera, Carrying Case, Simplex Plate Holder, Manual of Photography and Instruction Book.

Size of Camera	Focal Capacity Inches	Camera Closed Inches	Carrying Capacity Inches	Carrying Case Camera and 6 Holders
4 x 5	11¾	6¼ x 6½ x 8¼	12 x 4 x 7½	12½ x 5 x 7½
3¼ x 5½	12¾	7 x 7 x 9½	12½ x 6½ x 7½	12½ x 6½ x 7½
5 x 7	16¾	8¾ x 8½ x 9¾	15½ x 8 x 9	15½ x 8 x 9

Prices of Cameras and Supplies

	3A Post Card 4 x 5	5 x 7	6½ x 8½
Seneca No. 8, complete as above without lens or shutter, each	$46.76	$48.75	$59.25
Seneca No. 8 with Symmetrical Lens, *f*.8, and Wollensak Auto Shutter, each	54.56	54.55	70.15
Seneca No. 8 with Anastigmat Lens, speed *f*.7.5 and Betax or Seneca Shutter, each	62.35	62.35	93.55
Seneca No. 8 with Anastigmat Lens speed *f*.6.3 and Optimo or Acme Shutter each	85.70	85.70	132.66
Extra Simplex Double Plate Holders, each	2.20	1.45	2.55
Seneca Adapter (Supreme) for Film Packs, each	2.65	2.55	3.80
Supplementary Wide Angle Bed each	7.85	7.85	7.85

Prices include excise war tax

The Seneca Camera No. 9

Details

Camera Box—Ebony finish, corners dovetailed, covered with genuine leather, walnut grain. **Camera Bed**—Solid mahogany, ebony finish, attached to camera with improved nickel plated piano hinge. **Metal Parts**—Brass, handsomely nickel plated. **Bellows**—Black Russia leather, lined with grosgrain cloth. **Front**—Double sliding, vertical and horizontal. **Rack and Pinion**—For fine focusing. **Swing**—Back and Bed operated by a self-locking device. **Back**—Revolving with improved spring and spring actuated ground glass panel for focusing. **Tripod Sockets**—Two (one for bed of camera). **View Finder**—Brilliant, reversible, metal bound and hooded. Price includes Camera, Carrying Case, Seneca Plate Holder, Manual of Photography and Instruction Book.

Size of Camera	Focal Capacity Inches	Camera Closed Inches	Carrying Capacity Inches	Carrying Case Camera and 6 Holders
4 x 5	16	6¼ x 6½ x 8	12½ x 4½ x 7½	12½ x 5 x 7½
3¼ x 5½	17½	7 x 7 x 9½	12½ x 6½ x 7½	12½ x 6½ x 7½
5 x 7	22½	8¾ x 8¾ x 11¾	15½ x 8 x 9	15½ x 8 x 9

Prices of Cameras and Supplies.

	3A (Post Card) 4 x 5	5 x 7	6½ x 8½
Seneca Camera No. 9 complete as above without lens or shutter each	$ 77.35	$ 77.35	$ 81.00
Seneca Camera No. 9 with Rapid Symmetrical Convertible Lens, speed *f*.8, and Wollensak Auto Shutter, each	86.70	86.70	93.50
Seneca Camera No. 9 with Anastigmat Lens, speed *f*.7.5, and Betax or General Shutter, each	93.50	93.50	116.85
Seneca Camera No. 9 with Anastigmat Lens, speed *f*.6.3, and Optimo or Acme Shutter each	124.70	124.70	148.00
Supplementary Wide Angle Bed, each	1.65	1.65	1.65
Extra Seneca Double Plate Holders, each	2.20	1.45	2.55
Seneca Adapter (supreme) for Film Packs, each	2.55	2.55	3.90

Prices include excise war tax

Camera City View and Studio Outfit

For Home Portraiture and General View Work

Regardless of construction a De Luxe outstanding feature of the Camera City View Outfit is the many features are the leather covered three section double extension bed, rising and falling front, sliding back or reversible and harmonious swing backs, Brass Bellows Support and the Double and Single Sliding Plateholder.

Size of Camera	Focal Capacity	Dimensions of Camera	Weight	Lens Board
6 x 8	23¼ in.	43 x 10 x 11¼	7 lbs.	4¼ x 4¼
6½ x 8½	28 in.	5 x 11½ x 12½	8 lbs.	4½ x 4½
8 x 10	30 in.	8¾ x 12½ x 14½	14 lbs.	6¾ x 6¾
11 x 14	39½ in.	6½ x 17½ x 21	18 lbs.	8¾ x 8¾

Number of Holders Regular Case will carry with Camera 8 x 10 6 6½ x 8½ 6 5 x 7 12 4 x 5 12

Regular equipment includes Camera, Sliding Back, Double Front Bed, Carrying Case and one Improved Double Plate Holder or Portrait Film Holder. Single Back Holder (see 8 x 10 Camera). Extra Holders. Tripod Lens and Shutter. Square rise furnished, not 1, 4, 6 or 8 size.

Complete as above each	6 x 7 6½ x 8½	5 x 7	11 x 14
	$85.45	$71.40	$126.65
Leatherette Bellows on 11 x 14 size.		$7.40	
Camera City View and Studio Outfit fitted with Seneca Three-fold Convertible Symmetrical Lens, *f*.8, and Betax or Universal Shutter each	5 x 7 6½ x 8½		8 x 10
Extra Improved Double Plate Holders or Portrait Double Film Holders each	$92.45	$111.40	$125.60
	2.55	2.70	2.90

Prices include excise war tax

The Popular Pressman

For 3¼x4¼ Plates or Film Packs.

The Popular Pressman is a De Luxe Reflecting Camera admirably suited to portraiture indoors, high-speed work or picturesque scenic views, because, even in poorly lighted or under adverse light conditions. The lens is finished on the permanent one of the finest obtainable. It is a genuine *f*.4.5 Cooke Anastigmat objective, 6¾-inch focus, of the unmounted type. This lens, fitted with a focal plane shutter giving exposures from Time to 1/1000 second, is capable of any photographic task.

Besides the exposures indicated on the speed table, it is possible to obtain any fractional exposure between 1/15 second and 1/1000 second by manipulating the tension knob.

To overcome objectionable foreground in portrait work, a rising and falling front has been provided. A bellows extension of [illegible] besides one to work very close to the subject. This is especially convenient when photographing [illegible].

Size of Picture—3¼ x 4¼ inches. **Dimensions of Camera**—7½ x 5½ x 6 inches. **Weight**—4½ pounds. **Size of Lens Board**—3¾ x 3¾ inches. **Lens**—*f*.4.5 Cooke Anastigmat 5¾ inch focus. **Shutter**—Focal Plane Speed Shutter. **Bellows Extension**—9 inches. **Back**—Reversible. **Front**—Rising and Falling.

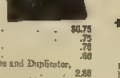
Prices

Popular Pressman 3¼ x 4¼ size with Cooke *f*.4.5 Anastigmat Lens. Price includes three single metal lenses, each	$194.60
Extra single Metal Plate Holder each	2.23
Leather covered Plate Holder each	7.85
Sole-leather Carrying Case, Plush Lined, each	27.15

Prices include excise war tax

Seneca Photo Optical Outfit

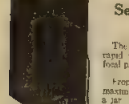
For Hand Cameras



This outfit consists of one Lenzer one Ray Filter and one Duplicator, each mounted mountings furnished complete in plush lined leather covered case.

Outfit complete, number as follows: 1-5 inches each	$4.50
Enlarging and Copying Lens each	.75
Wide Angle Lens each	.75
Portrait Lens, each	.50
Tele Photo Lens, each	$0.75
Ray Filter, each	.75
Duplicator each	.75
Any three of the above Supplementary Lenses and Duplicator, making four in all, furnished in case, as at	2.50
Any two of the above Lenses and Duplicator, making three in all, furnished in case as at	2.15

Seneca Focal Plane Shutter



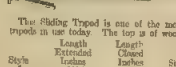
The photographer of anything in rapid motion can get the same with a focal plane shutter.

From Time to 1/1000 of a second—its maximum speed, it works quietly without a jar. It can be adapted to all folding reversible back plate cameras.

Size	Weight	Dimensions	Prices
4 x 5	15 oz.	6¾ x 6¾ x 1-13/16	$18.00
3¼ x 5½	15 oz.	6¾ x 6¾ x 1-13/16	18.00
5 x 7	22 oz.	8¾ x 8¾ x 1-13/16	17.89
6½ x 8½	23 oz.	10-7/16 x 10-7/16 x 1-13/16	19.20
8 x 10	30 oz.	12 x 12 x 1-15/16	20.00

Bargains in Photographic Supplies at These Low Factory Prices

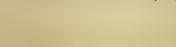
Seneca Metal Tripods



Seneca Metal Tripods are made of heavy gauge, seamless brass tubing. The lower legs, which telescope, are finished in polished brass—the upper in black enamel.

Cat. No.	Sections	Length Closed	Length Extended	Weight	Each
300	3	17 inches	43 inches	1 lb. 10 oz.	$4.20
400	4	5 inches	50 inches	2 lbs. 2 oz.	5.50
500	5	5 inches	55 inches	2 lbs. 10 oz.	5.90

Seneca Sliding Tripod (Wooden Top)



This Sliding Tripod is one of the most simple and improved tripods in use today. The top is of wood, covered with cloth.

Style	Length Extended Inches	Length Closed Inches	Size of Camera	Each
1	49½	30½	6½ x 8½	$4.20
2	60	33½	8 x 10	5.00
4	48½	29	17 x 20	6.70

SPECIAL SLIDING TRIPOD (Metal Top). Each $1.70

The Compact Tripod

(Wooden Top

Combined Sliding and Folding

Made of ash, and one of the most convenient forms yet devised. When it is extended it is 4 feet 8½ inches long, while it is but 22¾ inches in length when folded or closed.

Style	Size of Camera	Weight	Each
No. 2	5 x 7 and smaller	3 lbs.	$ 8.70
No. 3	6½ x 8½ and smaller	3 lbs. 2 oz.	10.00
No. 5½	11 x 14 and smaller	4 lb. 3 oz.	10.90

Special Compact Tripod

(Wooden Top)

In design and construction this tripod is similar to the regular compact tripod. It is constructed of ash and the trimmings are made of brass. The head is detachable. Dimensions: extended, 57 inches; folded 22¾ inches. Weight 27 ounces.

Each, $5.80

Lovers of Photography Will Quickly Recognize These Astounding Values

In this showing are supplies for Professional and Amateur Use. It is a high grade line throughout and especially priced in this selling.

SENECA FILM PACK ADAPTER
(Hingeless) For Daylight Loading Film Packs (Patented

This adapter is interchangeable with the plate holders.

The use of the Seneca Adapter (hingeless) for daylight loading Film Packs gives the added advantage of being able to use the ground glass for focusing.

Prices Each

3¼ x 4¼	4 x 5	3 x 5½	3½ x 5½	5 x 7
$2.30	$2.65	$2.65	$2.65	$3.80

CENTRAL DRY PLATES

The Central Dry Plate is a plate of general utility, that may be used by the amateur and professional alike successfully under all conditions. It is rapid enough for all ordinary requirements, does not soften or frill in the hottest developer, is clean and exceptionally fine grained. Made in all the popular sizes.

Size	Price per Dozen	Size	Price per Dozen
3 x 4	$1.15	5 x 7	$2.55
3¼ x 4¼	1.57	6½ x 8½	2.89
4 x 5	1.87	6½ x 8½	3.80
4 x 6½	2.27	8 x 10	5.60

Prices include war tax

KODAK FILM PACKS

Twelve exposures in each pack.

No.	Size	Prices	No.	Size	Prices
600	1¼ x 2¼	$0.60	542	3 x 3¼	$1.20
620	2½ x 3¼	.98	322	3A (3¼ x 5½)	2.38
616	2½ x 4¼	1.14	523	4 x 5	2.08
618	3¼ x 4½	1.15	6	5 x 7	3.80

Prices include war tax.

MISCELLANEOUS SUPPLIES

Prices Each

All Milled Head Screws and Tripod Screws, each $0.42
Bulbs and Tubes, to fit any Shutter, each ..... .63
Glass for Seneca Lamps, Ruby or Orange, each ..... .28
Ground Glass for 4 x 5 Cameras, 36c, for 5 x 7 Cameras, 45c; for 6½ x 8½ Cameras, 67c; for 8 x 10 Cameras, 85c; for 11 x 14 Cameras, $2.45.
Shoulder Straps for carrying cases, 35 inches, each. .75
Shoulder Straps for carrying cases, 60 inches, each. .90

FOCUSING CLOTH

One Focusing Cloth is made from the best goatskin material, light in weight, light tight and waterproof. Each cloth is 36 x 54 inches.

Price, each, $2.80

KITS TO FIT ANY HOLDER

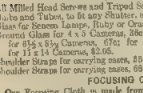
Kits make it possible for one to use smaller plates in a plate holder. Seneca Kits are made from selected wood and are thoroughly kiln dried.

Prices Each

4 x 5	—to take 3¼ x 4¼, 3¼ x 4 Plate	$0.38
5 x 7	—to take 3¼ x 4¼, 4 x 5, 3½ x 5½, 4¼ x 6½, 5 x 8 Plate	.56
6½ x 8½	—to take 3¼ x 4¼, 4 x 5, 3½ x 5½, 4¼ x 6½, 5 x 7 Plate	.84
8 x 10	—to take 3¼ x 4¼, 4¼ x 6½, 5 x 7, 6½ x 8½ Plate	.78
11 x 14	—to take 6½ x 8½, 8 x 10, 10 x 12 Plate.	1.17
14 x 17	—to take 11 x 14 Plate	1.88

Prices include excise war tax.

SENECA DEVELOPING PAPER



We offer with a feeling of justifiable pride a line of photo papers to which we attach our own label, Seneca Photo Papers of Quality.

In ordering Seneca Developing Paper be sure to specify the degree of contrast, surface and weight.

Seneca Developing Papers are supplied in three surfaces: Matte, Semi-Matte and Glossy; single and double weight, and three degrees of contrast—hard, medium and soft. Mention the surface, weight and contrast desired.

Size	—Single Weight— Developing Out Paper	Double Paper	—Double Weight— Developing Out Paper	Catalog Price
	Dozen	Gross	Dozen	Gross
2¼ x 3¼	$0.17	$ 1.70	$0.22	$ 2.10
2½ x 4¼	.22	2.00	.28	2.25
3¼ x 4¼	.28	2.65	.28	3.00
3½ x 5½	.28	2.65	.28	3.00
4¼ x 5½	.28	3.00	.38	3.75
4 x 5	.30	3.40	.45	3.75
4 x 6	.38	3.40	.45	3.85
5 x 7	.50	5.20	.51	6.05
6 x 8	.80	9.25	1.12	10.10
8 x 10	1.17	11.86	1.58	14.35
11 x 14	2.25	22.40	2.75	27.25

SENECA POST CARDS

Seneca Post Cards in Semi-Matte and Glossy surfaces, with Hard, Medium or Soft Contrast.

	Catal. Price
Sensitized Post Cards, per dozen	$0.39
Sensitized Post Cards, per 100	3.40
Sensitized Post Cards, per 500	8.30
Sensitized Post Cards, per 1,000.	16.00

SENECA CHEMICALS
Seneca M. Q. Developing Powders

Metol Hydrochinon developer for paper, plates and film
Box—six glass tubes for 30 oz. ready developer $0.50

Seneca Developer

4 oz. bottle $0.48 8 oz. bottle $0.75 16 oz. bottle $1.20

Seneca Tank Developing Powders 6 sizes of powders in a box.
For 2½ x 4¼ Film $0.45 3½ x 5½ $0.58 5 x 7. . $0.88

Hypo Hyposulphite of Soda'

Per pound $0.14

Seneca Acid Fixing Bath

For Developing and Fixing Paper, Film and dry plates

1 lb. box, for 64 oz. solution	$0.47
½ lb. box, for 32 oz. solution	.25
¼ lb. box for 16 oz. solution	.18

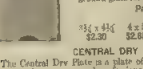
SENECA DOUBLE PLATE HOLDERS
Patented Light Trap and Wooden Bar for Holding Plate
Prices Each

Glass Size	Metal	Wood
3¼ x 4¼	$2.45	$1.95
3½ x 5½	2.75	2.20
4 x 5	2.75	2.20
5 x 7	2.85	2.25
6½ x 8½	3.25	2.70
8 x 10	$3.90	$2.90
11 x 14	$4.95	$3.95

Note—When ordering Seneca Improved Double Plate Holders for cameras of makes other than Seneca, specify style of camera.

ENGLISH STYLE BOOK HOLDER
Prices Each

11 x 14 for View Cameras	$5.80
11 x 14 for 10 x 12. . . .	5.80
4 x 17	7.20
7 x 17	7.95
8 x 20	8.60



SENECA PRINTING FRAMES

Prices Amateur Frames (Piano Hinge)

3¼ x 4¼ Each	$0.53
4 x 5 Each	.53
5 x 7 Each	.67
5 x 7 (rose oxid) each	.67
5 x 7 Each	.75

Prices Professional Frames (Piano Hinge)

3¼ x 4¼ Each	$0.84
4 x 5 . . .	.84
5 x 7 . . .	.84
6½ x 8½ Each	.84
7 x 9 Each	1.02
8 x 10 Each	1.70
6 x 8 Each	1.70
6½ x 8½ Each	1.95

8 x 10 Each	$ 2.80
10 x 12 Each	4.60
11 x 14 Each	5.00
14 x 17 Each	9.40
16 x 20 Each	11.35
18 x 22 Each	14.80
20 x 24 Each	13.40

SENECA TILTING TRIPOD TOP

The Tilting Tripod Top is made of metal and is supplied with a ball and socket. The ball and socket adjustment is an important feature for many purposes and is necessary where [illegible] horizontal adjustment. Our tripod tops are [illegible] and are made in [illegible] types to fit any tripod. The [illegible] is made of metal and is supplied with [illegible] special [illegible] [illegible] [illegible]

SIMONDS SAWS

Simonds Files

Simonds Files are the files most carpenters and saw filers use because a Simonds File cuts better and lasts longer than other makes.

Progressive dealers—aiming to give greatest service to their customers as well as best possible values always specify SIMONDS Files—all standard shapes and sizes including Slim Taper, Extra Slim, Special Hand Saw File, and Mill Files and Special Cross-Cut Files.

Slim Taper File

Extra Slim Taper File

Special Hand Saw File

Mill Bastard File

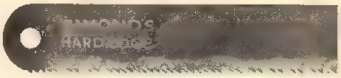
Special Cross Cut File

Simonds Hard Edge Hack Saw Blades

Better or more serviceable Hack Saw blades cannot be made. Dealers who sell Simonds Hard Edge Hack Saws will be sure to hold their trade.

Put this HACK SAW Hustler on your counter

14 Teeth to the Inch



18 Teeth to the Inch

24 Teeth to the Inch

32 Teeth to the Inch

SIMONDS SAW AND STEEL CO.

Fitchburg, Mass. **Chicago, Ill.**

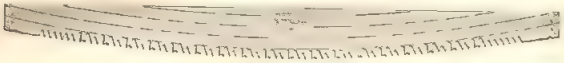
SIMONDS SAWS

Crescent Ground Cross-Cuts

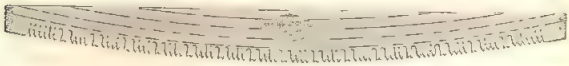
The advantage given by an even thickness throughout the tooth edge and a gradual taper from the tooth edge to the back is less set to the teeth and less kerf to cut. Our Crescent Ground Cross-Cut Saws have five gauges taper from the middle of the saw to the back.

Simonds Steel is made in our own Crucible Steel Mill exclusively for Simonds Saws. It is the only steel that we are sure will take a temper to hold a cutting edge longer than the ordinary saw.

The Simonds Saw, Crescent Ground, will cut ten per cent more timber, same time and labor being used, than any other brand of saw made in the United States.



No. 13



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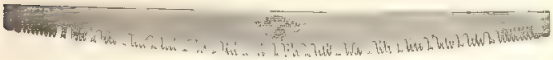
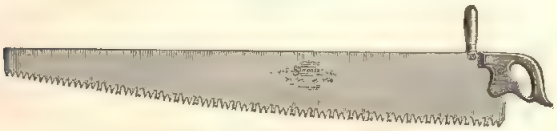


No. 324

No. 325

A medium priced, taper ground, Cross-Cut Saw for farm or construction use.

No. 0214



No. 111. One Man Saw

If your jobber cannot supply you, let us know.

Simonds Saw and Steel Co.

Fitchburg, Mass. **Chicago, Ill.**

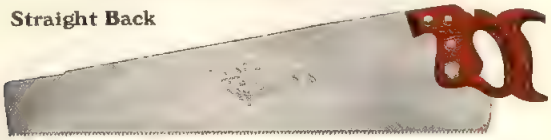
SIMONDS SAWS

Increase Profit Possibilities

Carry a complete line of Simonds Saws. No slow moving sizes to clutter your shelves and sap the profit from your tool department. The lengths and points of the Simonds Standards are those for which there is a brisk demand. You make more money for every dollar invested because you have a faster stock turnover. Write for our selling proposition and card showing best selection of lengths and points of saws for average store stock of 3, 4, 6, or 8 dozen saws.

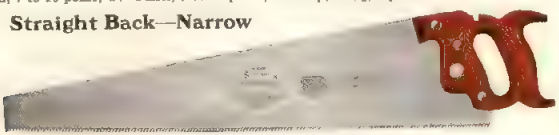
Simonds "Blue Ribbon" Hand Saws

Straight Back



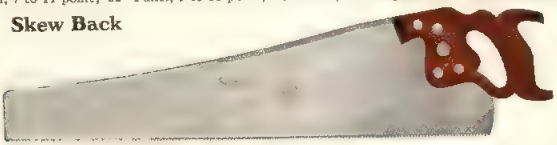
No. 71. Simonds "Blue Ribbon" Full width, straight back saw. Fine crucible steel blade, full taper ground, nicely polished. Carved apple wood handle.
26" Hand, 7 to 10 point; 24" Panel, 7 to 11 point; 26" Rip, 5 5½, 6 point.

Straight Back—Narrow



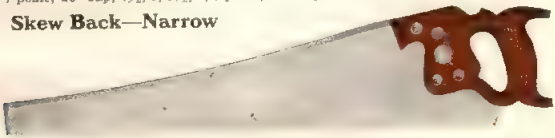
No. 371. Simonds "Blue Ribbon" Narrow Ship Pattern. Full taper ground. Fine carved apple wood handle. A very popular saw.
26" Hand, 7 to 11 point; 22" Panel, 9 to 11 point; 24" Panel, 8 to 11 point; 26" Rip, 5, 5½, 6 point.

Skew Back



No. 72. Simonds "Blue Ribbon" Full width, skew back saw. Polished apple wood handle, five screws, carved on grip.
26" Hand, 5, 5½, 6 to 11 point; 28" Hand, 5 to 8 point; 16" Panel, 9, 10 point; 18" Panel, 9 to 11 point; 20-22" Panel, 8 to 11 point, 24" Panel, 7 to 11 point; 20" Rip, 7 point, 22" Rip, 5-7 to 7 point; 24" Rip, 5, 5½, 6, 7 point; 26" Rip, 4½, 5, 5½, 6, 7 point; 28" Rip, 3½, 4, 4½, 5, 5½, 6 point.

Skew Back—Narrow



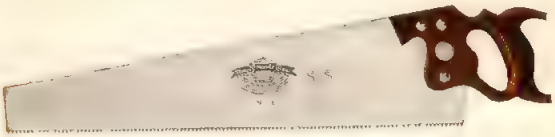
No. 372. Simonds "Blue Ribbon" Narrow skew back saw. Full taper ground blade. Polished apple wood handle, five screws, carved on grip.
26" Hand, 7 to 11 point; 22" Panel, 9 to 11 point; 24" Panel, 8 to 11 point, 26" Rip, 5, 5½, 6 point.

Note. If still higher grade saws are desired with high gloss finish to retail up to $5.00 order saws as above for shape in the following numbers: Same as No. 71 order No. 61, same as No. 371 order No. 361, same as No. 72 order No. 62, same as No. 372 order No. 362.

SIMONDS SAWS

Standard Style Hand Saws

You can supply your customers with any size hand saw from 18 to 28 inches or rip saw from 20 to 28 inches by selecting three or four of the standard saws made by the Simonds Saw and Steel Company. These are made in three grades; an extra high grade high price, a high grade medium price, and an excellent moderate price grade. You can reduce your stock investment by these selections and still have a complete assortment for practically all requirements.



No. 10. A medium width straight back. Manufacturer's own Brand Hand Saw. Full taper ground blade made of selected steel. Polished beech handle Sells at a price that strongly appeals to farmers, manual training students, and the worker around the home.
18″ Panel, 9 to 11 point; 20-22″ Panel, 8 to 11 point 24″ Panel, 7 to 10 point; 26″ Hand, 6 to 10 point; 24″ Rip, 6-7 point; 26″ Rip, 5, 5½, 6, 7 point.

No. 10½. Full width Skew back Hand Saw. Quality and Finish same as the No. 10. Full taper ground blade of selected steel. The quality of material and workmanship in these saws cannot be equaled for the price.
16″ Panel, 9, 10 point; 18″ Panel, 9 to 11 point, 20 22″ Panel, 8 to 11 point; 24″ Panel, 7 to 11 point; 26″ Hand, 5 to 11 point; 28″ Hand, 5 to 8 point, 20″ Rip, 7 point; 22″ Rip, 5½ to 7 point; 24″ Rip, 5 to 7 point; 26″ Rip, 4½ to 7 point; 28″ Rip, 3½ to 6 point.

Simonds No. 44 Warranted

A customer in every home and on every farm

The Simonds No. 44 Hand Saw is a manufacturer's own Brand -warranted –made in skew back pattern, 24″ length only, with either 7 or 8 point to the inch.

This saw is designed particularly for home use. It has a fine spring tempered steel blade, nicely polished. The handle is of seasoned beech carved on grip and has four screws. It is a good selling number. It meets the demand for a general purpose saw to sell over the counter for about two dollars, and carries an exceptionally good profit for the dealer.

Packed one-half dozen in a box. Ask your Jobber for them.

Sterling Silver, Gold Plate and Silver Finish Mesh Bags

GIFTS THAT LAST

Come fitted with blue sapphire stone set clasp.

No. J8767	Silver finish, 4 inch frame, each	$28.25
No. J8768	Silver finish, 5 inch frame, each	33.25
No. J8769	Gold plate, green gold finish, 4 inch frame, each	28.25
No. J8770	Gold plate, green gold finish, 5 inch frame, each	33.25

Come fitted with sapphire stone set clasp

No. J8771	Silver finish, 4 inch frame, each	$22.50
No. J8772	Silver finish, 5 inch frame, each	27.75
No. J8773	Silver finish, 6 inch frame, each	33.25
No. J8774	Gold plate, green gold finish, 4 inch frame, each	22.50
No. J8775	Gold plate, green gold finish, 6 inch frame each	33.25

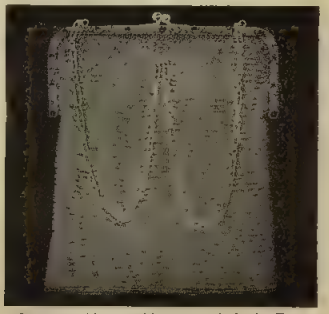
Come fitted with blue sapphire stone set clasp.

No. J8776 Sterling silver, 4½ inch frame, each.....$49.50

No. J8777	Gold plate, green gold finish, 4 inch frame, each.	$28.25
No. J8778	Gold plate, green gold finish, 5 inch frame, each...	33.75

Come fitted with blue sapphire stone set clasp.

No. J8779	Sterling silver, 4 inch frame each	$43.75
No. J8780	Sterling silver, 5 inch frame each	55.50



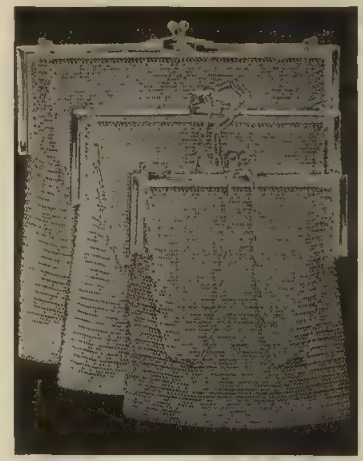
Come fitted with blue sapphire stone set clasp. Frame set with assorted colored stones, viz Rubies, Pearls, Sapphires, Emeralds and Amethysts

No. J8781	Gold plate, green gold finish 4 inch frame each	$23.25
No. J8782	Gold plate green gold finish 5 inch frame each	28.50

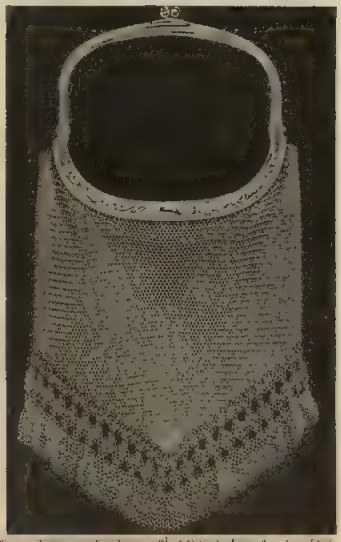
Remarkable Values in Exceptionally Fine and Beautifully Finished Mesh Bags

GIFTS THAT LAST

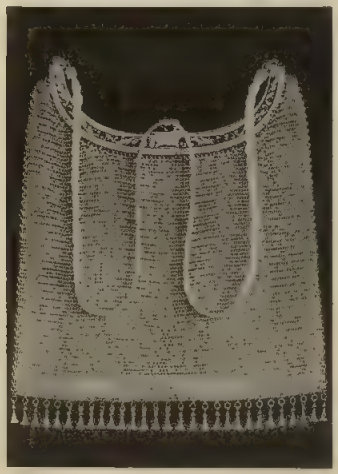
No. J8783 [illegible] inches, silver finish, each $ 8 25
No J8784 5-inch frame, length 6 inches, Gold finish, each 10.50
No J8785 5-inch frame, length 6½ inches, Silver finish, each 6 75
No J8786 5-inch frame, length 6½ inches, Gold finish, each 10 50
No J8787 4-inch frame length 5½ inches Silver finish each 6.75
No J8788 4-inch frame length 5½ inches Gold finish, each 9.00



	Silvered Finish		Rich Green Gold Finish	
No. J8789	6-inch frame, each	$7 00	No. J8793	6-inch frame, each $8 00
No J8790	5-inch frame, each	6 00	No J8795	5-inch frame, each 7 00
No J8791	4-inch frame, each	5.00	No. J8794	4-inch frame, each 6 00



Fancy [illegible] silver finish
stone set clasp
No J8795 Silvered finish, each $12.00
No J8796 Rich green gold finish, each 15 00



Especially prepared reversible fine mesh, beautifully etched 4½ inch frame, colored stone set clasp
No. J8797 Silvered finish, each $10 00
No. J8798 Rich green gold finish, each 13.50

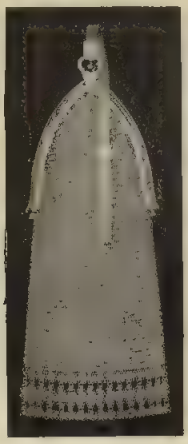
Fine Silver and Rich Green Gold Plate Mesh Bags

The latest and most up to date medium priced mesh bag made, all soldered mesh with chain and woven mesh handles as illustrated. Illustrations reduced size.

GIFTS THAT LAST

Especially prepared reversible fine mesh, beautifully etched, 2 inch frame. Length, 7¼ inches.

No. J8799	Silvered finish, each	$6.75
No. J8800	Rich green gold finish, each	9.00



Especially prepared reversible fine mesh beautifully etched, 3 inch frame. Length 7¼ inches.

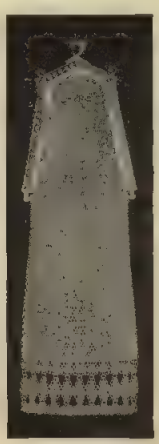
No. J8801	Silvered finish, each	$7.50
No. J8802	Rich green gold finish each	9.75

Especially prepared reversible fine mesh, beautifully etched, 3 inch frame. Length 7¼ inches.

No. J8803	Silvered finish, each	$7.50
No. J8804	Rich green gold finish, each	9 75

Especially prepared reversible fine mesh, beautifully etched, chain handle extends to tassels. Size of frame, 2¼ inches length 7 inches.

No. J8805	Silvered finish, each	$6.75
No. J8806	Rich green gold finish, each	9.00



Especially prepared reversible fine mesh, beautifully etched design. Size of frame 2½ inches, length 7¼ inches

No. J8807	Silvered finish, each	$6.00
No. J8808	Rich green gold finish, each	8.25

Especially prepared reversible fine mesh, beautifully etched design. Size of frame, 3 inches; length 7 ½ inches

No. J8809	Silvered finish, each	$6.75
No. J8810	Rich green gold finish, each	9.00

Fine Sterling Silver and White Metal Vanity Cases

All Attached with Seamless Soldered 12-inch Chains Guaranteed $\frac{925}{1000}$ Fine

GIFTS THAT LAST

WE STRIVE TO PLEASE YOU

Illustrations of Exterior are Two-thirds Size.

Illustrations of Interior are One-third Size.

Sterling silver, thin model, polished and embossed, plain back, gold lined, fitted with coin holders for nickels and dimes, powder puff and mirror. Size, 2x2¾ inches.

No. J8811 . . . . . **$10.00**

Upper illustration shows interior arrangement of this case.

Sterling silver, thin model, polished, richly hand engraved, plain back, fitted with coin holders for nickels and dimes, mirror, powder puff and card holder. Opens at top. Size, 2¼x3¾ inches.

No. J8812 **$15.00**

Upper illustration shows interior arrangement of this case

Sterling silver, thin model polished, plain back, fitted with coin holders for nickels and dimes, mirror, powder puff and card holder Size, 2¾x3½ inches

No. J8813 . . . . . **$15.00**

Upper illustration shows interior arrangement of this case

Sterling silver, thin model highly polished, plain back, fitted with coin holders for nickels and dimes, powder puff, mirror and card holder. Opens at top. Size, 2¼x3¼ inches.

No. J8814 . . . . . **$15.00**

Upper illustration shows interior arrangement of this case

Sterling silver, thin model, highly polished, embossed and engraved, plain back, fitted with coin holders for nickels and dimes, powder puff, mirror and card holder. Size, 2¼x3¼ inches

No. J8815 . . . . . **$15.00**

Upper illustration shows interior arrangement of this case

Sterling silver, thin model, polished and embossed, plain back, fitted with coin holders for nickels and dimes, powder puff, mirror and card holder Size, 2½x3½ inches

No. J8816 . . . . . **$15.00**

Upper illustration shows interior arrangement of this case

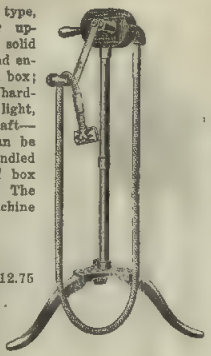
White metal, silver plated, thin model, highly polished, plain back, fitted with coin holders for nickels and dimes, powder puff, mirror and card holder. Size, 2½x3½ inches.

No. J8817 . . . . . **$8.00**

Upper illustration shows interior arrangement of this case

Stewart.

For Horses and Cows.



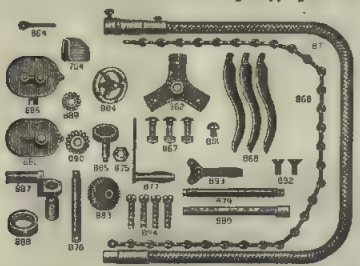
Ball bearing enclosed type, has rigid base; tubular upright; gears all cut from solid tool steel and hardened and enclosed in dust-proof metal box; all wearing parts are of hardened steel; new style, light, easy running flexible shaft—6 feet long; compact—can be carried in a satchel or handled as shelf goods. Size of box only 6x11x12½ inches. The most perfect clipping machine ever made at any price.

Stewart No. 1—Weight, boxed, 30 pounds. Each $12.75

Sheep Shearing Attachment—Each $12.50

Combined No. 1 Machine—For horse, cow and sheep shearing. Each $25.25

Parts for Stewart No. 1 Ball-Bearing Clipping Machine.



No.		Net Weight	Price
704	Gear cap	5½ oz.	$0.55
‡862	Leg bracket	41 oz.	.50
‡864	Cotter pin	¼ oz.	.02
866	6 foot chain	1 lb	1.95
‡867	Bracket stud and nut, each	2 oz.	.08
‡868	Legs, each	30 oz.	.50
871	6-foot shaft, without chain (old style)	39 oz.	3.50
871A	6-foot shaft, without chain (new style)	39 oz.	3.50
871-871A	Shaft and 866 chain 3½ lbs.		5.00
‡875	Crank nut	½ oz.	.05
‡876	Eye spindle	4 oz.	.55
‡877	Crank handle, complete	12 oz.	.75
‡879	Either section of upright, 13-in. long	17 oz.	.60
‡880	Coupling for upright	3 oz.	.30
‡882	Gear case cover	27 oz.	$1.00
‡883	Intermediate gear and pinion	12 oz.	2.50
‡884	Balance wheel and spindle	22 oz.	1.50
‡885	Drive gear and spindle	19 oz.	2.00
‡886	Gear case	50 oz.	1.50
887	Gear head	20 oz.	1.75
888	Balls and ball cup	1 oz	.85
889	Small cog	1 oz.	.40
890	Large cog	1 ½ oz	.60
‡891	Gear cap screw	⅛ oz.	.05
‡424	Grip handle screws, each	1 oz.	.05
893	Grip handle	11 oz.	.35
‡894	Gear case screws, each	1 oz.	.05
‡871E	3-inch ferrule for No. 871 shaft	4 oz	.35
‡871F	3-inch ferrule for No. 871A shaft		35
‡871R	5-inch ferrule for No. 871 shaft or 871A shaft	18 oz.	.50

Items marked thus ‡ not carried in stock. Shipped direct from factory.

Sheep Shearing Attachments.

For use on No. 1 horse clipping machine. This attachment consists of complete No. 5 Stewart shear head, four sets of shearing knives; the solid core, universal jointed shaft and cogs, as shown here. It is easily and quickly put on in place of the horse clipper shaft and knife. Shears fast, cut clean, saves wool, saves time, saves labor.

No. 55—Sheep Shearing Attachment—Weight, boxed, 10 lbs. Each.....$12 50

No. 77—Ball Bearing Sheep Shearing Attachment—With No. 7 shear, 4 sets of knives and ball bearing shaft. Each. 14.00

Stewart No. 9 Ball Bearing Sheep Shearing Machine.

Base and upright of this machine are the same as base and upright of the Stewart No. 1 ball bearing clipper. They are as substantial as it is possible to make them. The gearing is very similar to that of the No. 1 clipping machine also, but there is a much larger balance wheel to assist in the easy running once the machine is in motion. Every joint in the shaft and the shearing head itself is fitted with ball bearings, producing a machine that turns easier and cuts faster, with less effort on the part of the operator than any other machine ever made.

Every Owner of Five or More Sheep Should Use a Shearing Machine

No. 9—Weight of machine, boxed, 50 lbs. Price of each machine, fitted with No. 7 ball bearing shear and four combs and four cutters $21.00

Horse Clipping Attachment 8.50

Combined No. 9 Machine, for both sheep shearing and horse clipping 29.50

Extra.

No. 276 cutter—For above shear.....$0.25

No. 277 comb—For above shear..... .75

No. 7 shear—Complete 9 50

Items marked thus ‡ not carried in stock, but shipped direct from factory.

Horse Clipping Attachments.

Will fit any Stewart sheep shearing machine.

Consists of eye spindle and six feet of high quality flexible shaft. Also the famous Stewart clipping head. Can be attached in a few seconds. Owners of a Stewart sheep shearing machine who have horses should have this attachment.

Horse clipping attachment—
Weight, boxed, 10 pounds.
Complete, each ... $8.50

Stewart "One-Man" Power Shearing Machine.

Has complete clutch bracket with 3½ inch pulley. Readily belted to any engine. When not shearing, simply throw the clutch lever over to put out of gear. The bracket is of heavy cast iron made to fasten to a post or side of building. Has two-piece tube shaft with joint guards. Is equipped with Stewart No. 7 shear, complete with three extra sets of cutting plates (combs and cutters). It is widely used among those who sear from a few up to 400 or 500 sheep and who have an engine of some kind on the place.

Stewart Shearing Machine—Complete with No. 7 shear, three extra sets of cutting plates and three bolts for attaching. Weight, packed 40 pounds. Each $21.00

ELECTRIC CLIPPING MACHINES

Stewart.

Where there is considerable clipping to do this machine quickly pays for itself. Equipped with ¼ H. P. motor, at a speed of 1650 R. P. M., it clips very fast and takes care of a large amount of work. Clips horses, mules and cows. For efficiency and smooth easy running, no machine can equal it.

It is also ideal for cow clipping where the herd is too large to handle quickly with a hand-operated machine. The motors are of the highest quality and of special design to hang from the ceiling. The 7½-foot flexible shaft is connected direct to the armature shaft of the motor making a positive drive with no chance for lost motion. Is controlled by a convenient switch on the motor. Used extensively in large stables and by the U. S. Army and never fails to give the service expected. Made for alternating and direct curent motors for standard voltage. When ordering state voltage wanted, and if for alternating curent, state the cycle. Your electric company can give you this information. There is a difference in price as it costs more to build alternating current motors.

‡**Stewart**—Hanging type; 110 or 220 volt alternating or direct current; 60 or 25 cycle. Weight, each, 65 pounds. Each $80.00

The six foot flexible shaft is connected by universal joint to armature shaft of motor, making a positive drive with no chance for lost motion. Fitted with improved Stewart single tension clipping head, it requires less tension than any other style of head. The knives stay sharp longer and give better service. Used for sheep shearing by fitting with a special sheep shearing attachment, furnished at a small extra cost. Has a good length cord and a convenient switch.

‡**Stewart**—Pedestal type; 110 or 220 volt direct or alternating current; 60 cycle. Weight, each, 100 pounds. Each $85.00

One in a crate.

Items marked thus ‡ not carried in stock, but shipped direct from factory.

CLIPPING MACHINE PARTS

The Latest Improved Stewart Clipping Head Patented.

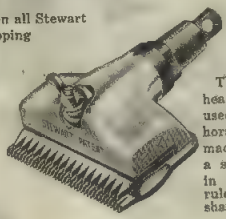
All Stewart clipping machines made since Jan. 1, 1915, have a new style clipping head, requiring new style top plate (No. 360) and new style bottom plate (No. 361) that will not fit the old head. The shank of the new head has a square shoulder and the ferrule on end of shaft has a square socket into which the shank fits perfectly and cannot turn in the hand when in use The new head will not fit old style shafts (with round socket ferrules) and the old head will not fit the new shaft.

The old style plates, No. 90 top and No. 99 bottom, also old style heads complete, will continue to be in big demand for some time to come on account of the very large number of machines in use, sold previous to Jan. 1, 1915

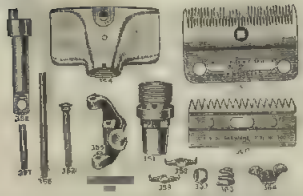
The new head represents the greatest advance made in horse clipping machines in twenty-five years. The top plate attaches to a cross-head that travels on guide pins, accomplishing a smooth, absolutely true movement of the top plate over the bottom plate, reduces friction and wear to a minimum and causes the plates to wear and stay sharp longer and do perfect work with less tension.

Parts for Stewart Latest Model Cutting Head for Horse Clipping Machines.

As supplied on all Stewart horse clipping machines since Jan. 1, 1915.



This clipping head can be used only on a horse clipping machine with a square hole in 3-inch ferrule of flexible shaft.



B-1—Stewart latest model cutting handle and knife complete. Weight, 16 ounces. Each $4.00

‡**B2**—Stewart latest model clipping knife without handle. Weight, 5 ounces Each 3 00

‡**B3**—Stewart latest model clipping handle only. Weight, 11 ounces. Each 1.00

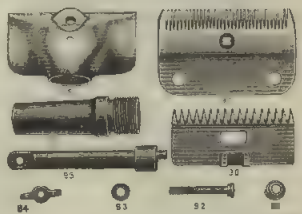
No.	Net Weight	Price
No. 91—Tension Spring, ⅛ ounce. Each		$0.10
No. 92—Tension Bolt, 1-5 ounce. Each		.05
No. 94—Tension Nut, 1-7 ounce. Each		.05
‡351—Taper sleeve	2 oz.	$0.50
‡352—Drive pin	2 oz.	.35
353—Drive ball	½ oz.	.10
354—Brace	5 oz.	.60
355—Cross head	1 oz.	.50
356—Cross head pin	½ oz.	$0.10
357—Guide pins	1-7 oz.	.05
358—Ball boss for No. 354 brace	1-7 oz.	.05
359—Socket boss for No. 361 bottom plate	1-7 oz.	.05
360—Top plate	2 oz.	1.25
361—Bottom plate	3 oz.	1 75

Stewart Single Tension Clipping Head.

Supplied with all Stewart horse clipping machines previous to Jan. 1, 1915.

This clipping head can be used only on a horse clipping machine with a reund hole in the 3-inch ferrule of the flexible shaft.

Parts of Head.



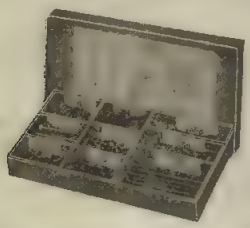
No.	Net Weight	Price
C1—Stewart patent horse clipper handle and knife complete	20 oz.	$4.00
‡C2—Stewart patent horse clipper knife, without handle	8 oz.	3.00
‡C3—Stewart patent horse clipper handle only	10 oz.	1.00
90—Top plate	3 oz.	1.25
91—Tension spring of handle	⅛ oz.	.10
92—Tension bolt of handle	⅛ oz.	.05
93—Eccentric roll of handle	⅛ oz.	.10
94—Tension nut of handle	⅛ oz.	.05
95—Pin and shaft of handle	2⅛ oz.	.35
97—Shank of handle	3⅛ oz.	.50
98—Front part of handle	4 oz.	.60
99—Bottom plate	5 oz.	1.75

Items marked thus ‡ shipped direct from factory.

PARTS AND GRINDERS

B. & C. ASSORTMENT

For Stewart B1 and C1 Clipping Heads.



Quantity	Part No.		List	
12	91	Tension Spring	$0.05	B1 or C1 Head
12	92	Tension Bolt	.05	B1 or C1 Head
6	93	Eccentric Roll	.10	C1 Head only
12	94	Tension Nut	.05	B1 or C1 Head
6	353	Drive Ball	.10	B1 Head only
6	356	Cross Head Pin	.10	B1 Head only
12	357	Guide Pin	.05	B1 Head only
6	358	Ball Boss	.05	B1 Head only
6	359	Socket Boss	.05	B1 Head only

No. B. C. Assortment—For Stewart B1 and C1 Clipping Heads. Per assortment.....$4.80

One assortment in a box; parts numbered.

GRINDERS

The New Stewart No. 2 Automatic Grinder.

The best hand operated sharpening device made for dull horse clipping or sheep shearing machine plates. Grinding disc is covered with emery cloth on the same principle as the large power grinding machines used in large shearing plants. This emery cloth surface can be renewed any time. It is the most practical grinder for dealers or others who have considerable grinding to do. In ordering, give names and numbers of plates to be sharpened so proper clamp rods will be supplied. No cams to change on this grinder. Each grinder shipped complete with emery cloth, liquid cement, clamp block and clamp rod.

No. 2 Auto grinder—Diameter of disc, 14½ inches; height over all, 2 feet. Weight, boxed, 110 pounds. Each.....$34..00

Stewart Grinder attaches to any No. 1 Stewart Horse Clipping Machine or Stewart No. 8 or No. 9 Sheep Shearing Machine.

This grinder is constructed of metal throughout, and by a simple and ingenious mechanism is attached to the gear case of the machine in place of the shaft.

Stewart No. 11 Grinder—Complete, ready to attach to clipping or shearing machines. Weight, boxed, 9 pounds. Each.....$6.75

SHARPENING KNIVES

‡**Grinding Sheep Shear knives**—Per set.....$0.30
‡**Grinding Sheep Shear Combs**.....20
‡**Grinding Sheep Shear Cutters**.....10
‡**Grinding all kinds of Horse Clipper Knives**—Per set .50
‡**Grinding Barber and Fetlock Clipper Knives** (all makes).....50

MISCELLANEOUS PRICES

‡**Oil**—Per pint.....$0.50
‡**Oil**—Per quart.....75
‡**Oil**—Per gallon.....2.00
‡**Small Squirt Can**—Full of oil.....25
Chain for Flexible Shaft—Per foot.....35
Chain for Flexible Shaft—Per dozen links.....45
Chain Grease—1 lb. can.....40
‡**Emery Cloth Circles**—For No. 2 Automatic Grinder (14½-inch diameter)—Each.....50
Emery Paste—For No. 3 and No. 11 Grinders—Per package.....50

Items marked thus ‡ not carried in stock, but shipped direct from factory.

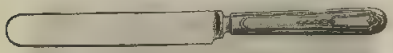
TUDOR PLATE

DUCHESS PATTERN

Butler Finish (Grey)—20 Year Guarantee.

This beautiful pattern brot out by the Community people is designed to give the consumer a real high class product at a low price. Thick overall plating. Special sectional plating at the wearing points. All correct service pieces fastened with ribbon in beautifully designed gift boxes lined with blue, making wonderful counter and window displays. Each fancy piece sealed in special imported anti-tarnish moisture proof transparent paper.

HOLLOW HANDLE KNIVES



No. 36611—Medium or table knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅞ pounds. Length, 9¾ inches. Per dozen.....$16.50

No. 36664—Medium or table knife, (stainless), packed one-half dozen in a racked box. Weight, per dozen, 1⅞ pounds. Length, 9¾ inches. Per dozen..... 18.50

No. 36612—Dessert or luncheon knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅛ pounds. Length, 8¾ inches. Per dozen..... 16.00

EMBOSSED HANDLED KNIVES

No. 36615—Medium or table knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅞ pounds. Length, 9⅛ inches. Per dozen.....$7.50

No. 36616—Dessert or luncheon knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅛ pounds. Length, 8½ inches. Per dozen..... 7.30

EMBOSSED HANDLED FRUIT KNIVES

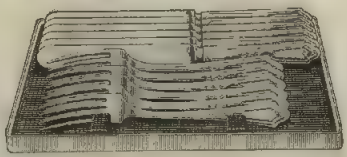
No. 36698—Fruit knife, packed one-half dozen in a racked box. Weight, per dozen, 11 ounces. Length, 6½ inches. Per dozen.....$6.00

FORKS

No. 36607—Medium flat fork, packed one dozen in a plain box. Weight, 1⅞ pounds. Length, 7⅛ inches. Per dozen $6.00

No. 36606—Dessert flat fork, packed one dozen in a plain box. Weight, 1⅛ pounds. Length, 7 inches. Per dozen 5.50

KNIFE AND FORK SETS



No. 36742—Medium hollow handle knife and flat fork set. Packed one set in a racked box. Weight, per set, 2 pounds, 14 ounces. Per set.....$11.25

No. 36598—Medium hollow handle knife and flat fork set, (stainless). Packed one set in a racked box. Weight, per set, 2 pounds, 14 ounces. Per set..... 12.25

No. 36743—Dessert hollow handle knife and flat fork set. Packed one set in a racked box. Weight, per set, 2 pounds, 8 ounces. Per set..... 10.75

No. 36803—Medium or table embossed handle knife and flat fork set. Packed one set in a racked box. Weight, 2 pounds, 9 ounces. Per set.....$6.75

No. 36804—Dessert embossed handle knife and flat fork set. Packed one set in a racked box. Weight, 2 pounds, 6 ounces. Per set $6.40

SPOONS

No. 36602—Teaspoons, packed one dozen in a plain box. Weight, 13 ounces. Length, 6 inches. Per dozen..$3.00

No. 36603—Dessert spoons, packed one dozen in a plain box. Weight, 1⅞ pounds. Length, 7⅛ inches. Per dozen 5.50

No. 36605—Table spoons, packed one dozen in a plain box. Weight, 1¾ pounds. Length, 8⅛ inches. Per dozen 6.00

JANNEY, SEMPLE, HILL & CO.

TUDOR PLATE

DUCHESS PATTERN

Butler Finish (Grey)—20 Year Guarantee.

This beautiful pattern brot out by the Community people is designed to give the consumer a real high class product at a low price. Thick overall plating. Special sectional plating at the wearing points. All correct service pieces fastened with ribbon in beautifully designed gift boxes lined with blue, making wonderful counter and window displays. Each fancy piece sealed in special imported anti-tarnish moisture proof transparent paper.

SOUP AND BOUILLON SPOONS

No. 36604—Round bowl soup spoons, packed one dozen in a plain box. Weight, 1¼ pounds. Length, 7⅛ inches. Per dozen.....$6.00

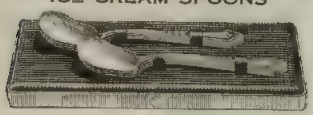
No. 36622—Bouillon or consomme spoons, packed six in a lined gift box. Weight, 10 ounces. Length, 4⅛ inches. Per dozen 6.00

COFFEE SPOONS

No. 36625—A. D. Coffee spoons, packed six in a lined gift box. Weight, 6 ounces. Length, 4½ inches. Per dozen $3.50

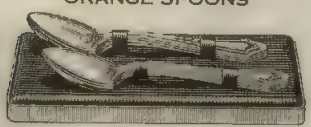
No. 36601—Sherbet or 5 o'clock teaspoons, packed six in a lined gift box. Weight, ¾ pound. Length, 5⅛ inches. Per dozen..... 3.50

ICE CREAM SPOONS



No. 36657—Ice cream or sundae spoons, packed six in a lined gift box. Weight, 10 ounces. Length, 5½ inches. Per dozen $5.50

ORANGE SPOONS



No. 36641—Orange or grapefruit spoons, packed six in a lined gift box. Weight, 10 ounces. Length, 5⅝ inches. Per dozen.....$5.50

ICED TEA SPOONS

No. 36629—Iced tea or iced drink spoons, packed six in a lined gift box. Weight, 10 ounces Length, 7½ inches. Per dozen $6.00

SUGAR SPOONS

No. 36650—Sugar spoon, packed one in a lined gift box. Weight, 4 ounces. Length, 6⅞ inches. Per dozen..$8.40

BUTTER KNIVES

No. 36695—Butter knife, packed one in a lined gift box. Weight, 4 ounces. Length, 7⅛ inches. Per dozen..$8.40

JAM OR CONSERVE SPOONS

No. 36483—Jam or conserve spoons, packed one in a lined gift box. Weight, 6 ounces. Length, 5⅛ inches Per dozen $7.20

BERRY OR SERVING SPOONS

No. 36620—Berry or serving spoons, packed one in a lined gift box. Weight, 10 ounces. Length, 9⅛ inches. Per dozen $21.00

TUDOR PLATE

DUCHESS PATTERN

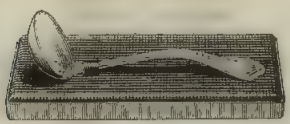
Butler Finish (Grey)—20 Year Guarantee.

This beautiful pattern brot out by the Community people is designed to give the consumer a real high class product at a low price. Thick overall plating. Special sectional plating at the wearing points. All correct service pieces fastened with ribbon in beautifully designed gift boxes lined with blue, making wonderful counter and window displays. Each fancy piece sealed in special imported anti-tarnish moisture proof transparent paper.

CREAM LADLES

No. 36715—Salad dressing or cream ladles, packed one in a lined gift box. Weight, — ounces. Length, 5¾ inches. Per dozen $12.00

GRAVY LADLES

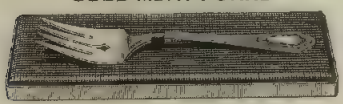


No. 36717—Serving or gravy ladles, packed one in a lined gift box. Weight, — ounces. Length, 6¾ inches. Per dozen $18.00

SOUP LADLES

No. 36721—Medium soup or serving ladles, packed one in a lined gift box. Weight, 14 ounces. Length, 10⅝ inches. Per dozen $42.00

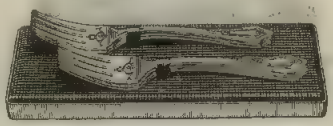
COLD MEAT FORKS



No. 36667—Cold meat or serving forks, packed one in a lined gift box. Weight, 6 ounces. Length, 8⅜ inches. Per dozen $15.00

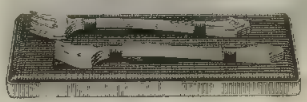
No. 36668—Small cold meat fork ,packed one in a lined gift box. Weight, 4 ounces. Length, 6⅛ inches Per dozen 10.20

INDIVIDUAL SALAD FORKS



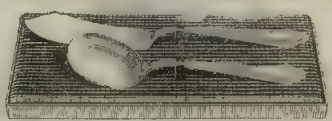
No. 36688—Individual salad or pastry forks, packed six in a lined gift box. Weight, 12 ounces. Length, 6⅛ inches. Per dozen $8.50

OYSTER FORKS



No. 36679—Oyster or sea food forks, packed six in a lined gift box. Weight, 9 ounces. Length, 6⅛ inches. Per dozen $5.50

BUTTER KNIFE AND SUGAR SPOON



No. 36729—Butter knife and sugar spoon set, packed one set in a lined gift box. Weight, 7 ounces. Per set .....:$1.40

BUTTER SPREADERS

No. 36697—Individual butter spreaders, packed six in a lined gift box. Weight, 15 ounces. Length, 6¼ inches. Per dozen.....$7.50

TUDOR PLATE

DUCHESS PATTERN

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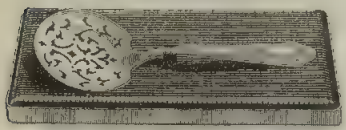
PICKLE FORKS

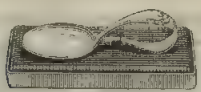
No. 36682—Pickle or olive forks, packed one in a lined gift box. Weight, 3 ounces. Length, 6⅜ inches. Per dozen $12 00

PIERCED SERVERS



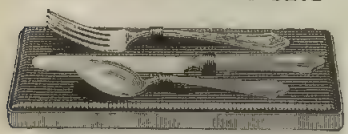
No. 36690—Pierced server, packed one in a lined gift box. Weight, 5 ounces. Length, 7⅝ inches. Per dozen $21.00

BABY SPOONS



No. 36619—Baby spoons, (bent handle) packed one in a lined gift box. Weight, 2 ounces. Length, 2½ inches Per dozen $6.00

THREE PIECE CHILD SETS



No. 36737—Child's set, (flat handles) packed one set in a lined gift box. Weight, per set, 7 ounces. Length of knife, 7¼ inches. Per set.....$1.75

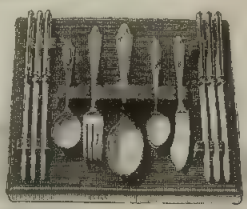
CARVING SETS

No. 36728—2 piece—Steak or game carvers, hollow handle; packed one pair in a lined gift box. Weight, 11 ounces. Length of knife, 10 inches. Per pair....$7.00

BUFFET SETS

26 Piece.

A staple set for any home. Striking display feature. The best wedding present. Sold for price of silver alone—chest free. Handy for table setting. Slips easily into sideboard drawer. Not an assortment but standard 26-piece container.



No. 36585—Embossed handle medium knives. Weight, per set, 5 pounds. Per set.....$12.75

No. 36500—Embossed handle dessert knives. Weight, per set, 5 pounds. Per set.....$12.50

No. 36584 Hollow handle medium knives. Weight, per set, 5 pounds. Per set.....$17.25

No. 36578 Hollow handle dessert knives. Weight, per set, 5 pounds Per set $16 75

TULIP ENAMELED WARE

A Very Durable, High Grade Enameled Ware of Azure Blue Color, attractively marbleized and lined with pure snow white enamel that is absolutely Acid Proof, Smooth and Easy to Clean.

LIPPED SAUCE PANS

Nos.	12T	16T	20T	22T
Size, inches	5⅞x2⅝	7x3⅛	8⅛x3⅜	9x4⅛
Capacity, qts	1	2	3	4
Wt. per doz., lbs	9	14	18	20
Per Dozen	$5 50	6 80	8 00	9 60

Nos.	24T	26T
Size, inches	10x4¼	11x4¾
Capacity, qts	5	6
Wt. per doz., lbs	22	35
Per Dozen	$10 70	12 00

CONVEX SAUCE PANS

Enameled Covers.

Nos.	031T	041T	061T
Size, inches	7⅛x4⅜	7⅛x4¾	8⅝x6
Capacity, qts	3	4	6
Wt. per doz., lbs	34	36	38
Per Dozen	$13 20	16 20	19 90

CONVEX KETTLES

Enameled Covers.

Nos.	031T	041T	061T
Size, inches	7¾x4⅜	8⅜x4¾	8⅝x6
Capacity, qts	3	4	6
Wt. per doz., lbs	25	36	38
Per Dozen	$13.20	16 20	19 90

Nos.	081T	0101T
Size, inches	9⅝x6½	10⅞x6⅞
Capacity, qts	8	10
Wt. per doz., lbs	70	90
Per Dozen	$24.40	28 80

No.	0121T
Size, inches	11¾x7
Capacity, qts	12
Wt. per doz., lbs	97
Per Dozen	$33 70

Enameled Covers.

PRESERVING KETTLES

Nos.	22T	24T	26T
Size, inches	9x4½	9⅞x4¾	10⅞x4¾
Capacity, qts	4	5	6
Wt. per doz., lbs	22	24	30
Per Dozen	$9 60	10 70	12 00

Nos.	28T	30T	32T
Size, inches	11⅛x5½	12¾x5¾	12⅜x5½
Capacity, qts.	8	10	12
Wt. per doz., lbs	34	41	49
Per Dozen	$14 00	16 20	19 20

TEA KETTLES

Flat Bottoms, Fancy Spots, Seamless Enameled Covers

Nos.	07T	08T
Size, inches	10x6⅛	10x6½
Capacity, qts	5	7
Wt. per doz., lbs	44	49
Per Dozen	$22 60	25 20

Enameled Covers

Nos.	180T	190T
Size, inches	10x5⅞	10⅛x6½
Capacity, qts.	7	9
Wt. per doz., lbs	82	90
Per Dozen	$20 50	35 50

MILK OR RICE BOILERS

Enameled Covers.

Nos.	521T	531T	541T	561T
Trade Cap, qts	2	3	4	5
Lower, qts	1½	2	3½	4½
Inset, qts	1½	2	3	4
Wt. per doz., lbs	48	51	68	91
Per Dozen	$20 60	23.60	29.50	35 50

COFFEE BOILERS

Retinned Covers.

Nos.	08T	09T
Size, inches	9¾x8½	10½x10½
Capacity, qts	7¾	10½
Wt. per doz. lbs	63	83
Per Dozen	$26 50	34.00

COFFEE POTS

High Dome Enameled Covers

Nos.	51T	151T	251T
Size, inches	4⅝x7	5¼x7¼	5¾x8
Capacity, qts	1	1½	2
Wt per doz., lbs.	29	30	33
Per Dozen	$11 80	13 20	14 80

Nos.	351T	451T
Size, inches	6½x0	6¾x9¼
Capacity, qts	3	4
Wt. per doz., lbs	35	44
Per Dozen	$16 20	17.70

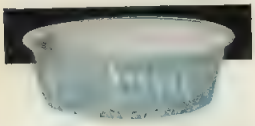
TULIP ENAMELED WARE

TEA POTS

Enameled Covers

Nos.	01T	101T	201T
Size, inches	4½x7	5¼x7¼	5¾x8
Capacity, qts	1	1½	2
Wt. per doz., lbs	27	31	33
Per Dozen	$12 50	14 00	15 50

PUDDING PANS



Nos	1T	2T	3T
Size, inches	7x2½	8¾x2¾	9¼x3½
Capacity, qts	1	2	3
Wt. per doz., lbs.	9	12	17
Per Dozen	$4 80	5 90	6 40

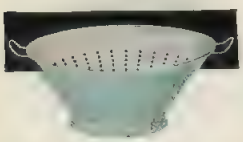
Nos.	4T	5T	6T
Size, inches	10x3	11x4	11¾x3½
Capacity, qts	4	5	6
Wt. per doz, lbs	18	21	24
Per Dozen	$7 20	8 50	9 60

MIXING BOWLS

Nos.	115T	120T	125T
Size, inches	5⅞	6¾	7
Capacity, qts	¾	1	1½
Wt per doz., lbs	14	17	19
Per Dozen	$4 80	5 20	5 50

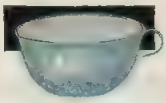
Nos.	130T	140T
Size, inches	8½	10¾
Capacity, qts	1⅝	3½
Wt. per doz, lbs	21	23
Per Dozen	$7 00	9 20

COLANDERS



No.	25T
Size, inches	11½
Wt. per doz., lb.	23
Per Dozen	$12 50

FLARING DRINKING CUPS



No.	100T
Size, inches	4⅝
Capacity, pts	¾
Wt per doz., lbs	5
Per Dozen	$3 70

DEEP STRAIGHT CUPS

No.	23T
Sizes, inches	3¼x2¾
Capacity, pts	¾
Wt per doz. lbs	6
Per Dozen	$4 80

BASTING SPOONS

Nos.	12T	14T
Size, inches	12	14
Wt per doz., lbs	3	4
Per Dozen	$3 30	3 70

SOLID LADLES

Flat Handles with Hook

No.	10T
Size, inches	3⅛
Wt per doz lbs	6
Per Dozen	$4 50

WINDSOR DIPPERS

Improved Oval Steel Handles

Nos.	600T	610T	612T
Size, inches	4½x2½	4¾x3¾	5¾x3¾
Capacity, qts	¾	1	1½
Wt per doz., lbs	8	10	12
Per Dozen	$5 20	5 90	6 60

PIE PLATES

Nos.	Shallow 9T	Shallow 10T	Deep 90T	Deep 100T
Size, inches	9x⅞	10x⅞	9x1¼	10x1¼
Wt per doz lbs	8	9	9	11
Per Dozen	$4 20	4 80	4 50	5 30

MILK KETTLES

With Bails, Pressed to Band, Enameled Covers.

Nos.	510T	520T
Size, inches	4⅝x6⅜	5x7⅝
Capacity, qts	1½	2
Wt. per doz, lbs	22	27
Per Dozen	$14 80	18 50

DISH PANS

Hollow Handles

Nos.	10T	14T	17T	21T
Size, inches	11¾x17⅛	15¾x5	17¾x5½	19¼x5½
Capacity, qts	10	14	17	21
Wt. per doz., lbs	48	54	78	88
Per Dozen	$17 60	20 40	23 20	28 00

TULIP ENAMELED WARE

WASH BOWL AND WATER PITCHER

No.	3420T
Wash Bowl, No. 44, qts	5
Water Pitcher, No. 20, qts	4
Wt. per doz., lbs	50
Per Dozen Sets	$37 40

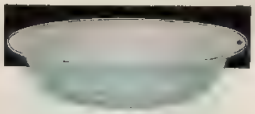
WATER PITCHERS

Hollow Stee. Handles

No.	20T
Size, inches	10½
Capacity, qts	4½
Wt. per doz., lbs	29
Per Dozen	$26 60

Nos.	402T	404T
Size, inches	5⅜	6½
Capacity, qts	13/4	17/8
Wt. per doz., lbs	15	23
Per Dozen	$11 80	14 80

WASH BASINS



Nos.	30T	32T	34T
Size, inches	12½	13	13½
Capacity, qts	3½	3¾	5
Wt. per doz., lbs	14	17	23
Per Dozen	$8 20	9 60	10 80

WALL SOAP DISHES

Corrugated with Drainers

No.	60T
Size, inches	6x3¾
Wt. per doz., lbs	3
Per Dozen	$5 20

COMBINETS

No.	200T
Size, inches	9½x9
Capacity, qts	12½
Wt. per doz., lbs	78
Per Dozen	$43 20

One in container

WATER PAILS

Enameled Wood Handles.

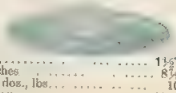
Nos.	110T	112T	114T
Size, inches	10½x8½	11x9	12x9
Capacity, qts	10	12	14
Wt. per doz., lbs	54	66	74
Per Dozen	$20 40	23 20	28 00

TRIANGULAR SINK DRAINERS

Seamless with Feet

No.	7T
Size, inches	10x7⅞x3
Wt. per doz., lbs.	16
Per Dozen	$8 00

CHAMBER COVERS

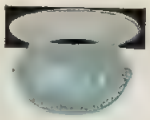


Nos.	1½T	2T
Size, inches	8⅞	10½
Wt. per doz., lbs	10	13
Per Dozen	$5 20	5 90

CHAMBERS

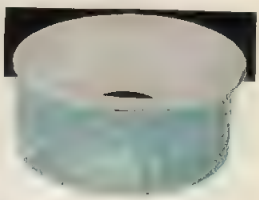
Nos.	1½T	2T
Size, inches	8¼x4½	9⅜x4¾
Wt. per doz., lbs	24	32
Per Dozen	$11 00	13 20

CUSPIDORS



No.	3T
Size, inches	7½x5
Wt. per doz., lbs	23
Per Dozen	$12 00

SPITTOONS



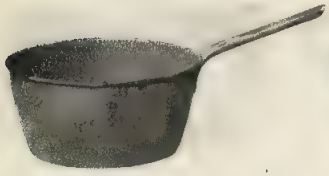
Removable Sanitary Covers

No.	30T
Size, inches	10⅞x6
Wt. per doz., lbs	54
Per Dozen	$20 00

CREAM CITY GRAY ENAMELED WARE

An Attractively Mottled, High Grade, Very Durable and Smooth Enameled Ware that has Proven Highly Satisfactory.

SAUCE PANS



Lipped.

Nos.	14G	16G	18G	20G
Size, inches	6 3/32x1 1/2	7x4 1/2	7 3/32x3 1/2	8 1/32x3 1/2
Capacity, qts	1 3/4	1 1/2	2	2 1/2
Wt. per doz., lbs	9	13	14 1/2	16
Per Dozen	$4.60	5.30	5 60	6.60

Nos.	22G	24G	26G
Size, inches	9x4 1/2	10x4 1/4	11x4 3/4
Capacity, qts	3 1/4	4 1/2	6
Wt. per doz., lbs	18	20	32
Per Dozen	$7.50	8 60	9 70

CONVEX KETTLES

Retinned Cover.

Nos	03G	04G	06G
Size, inches	7 3/4x4 1/2	8 3/4x4 3/4	8 3/4x6
Capacity, qts	3	4	5 1/2
Wt per doz lbs	23	33	34
Per Dozen	$9 00	10 50	12 70

Nos.	08G	010G	012G
Size, inches	9 3/4x6 1/2	10 1/4x8 3/4	11 3/4x7
Capacity, qts	7 1/4	9 1/2	12
Wt per doz , lbs	72	84	88
Per Dozen	$15 60	19 40	22 50

TEA POTS

Retinned Cover

Nos.	0G	10G	20G
Size, inches	4 5/8x7	5 7/8x7 3/4	6 3/4x8
Capacity, qts	1	1 1/2	2
Wt per doz., lbs	27	29	30
Per Dozen	$9 80	1 00	12 30

TEA KETTLES

Enameled Cover

Nos.	05G	06G	07G
Size, inches	8 1/4x8 1/4	9x4 3/4	10x5 1/2
Capacity, qts	2 3/4	3 1/4	4 1/2
Wt. per doz , lbs	28	30	40
Per Dozen	$14 80	15 80	18 00

Nos.	08G	09G
Size, inches	10x6 1/8	11x6 1/4
Capacity, qts	6	6 3/4
Wt. per doz., lbs	45	54
Per Dozen	$20 40	25 00

CONVEX SAUCE PANS

Nos.	03G	04G	06G
Size, inches	7 1/16x4 3/4	7 1/16x4 3/4	8 1/16x6
Capacity, qts	3	4	5 1/2
Wt per doz., lbs	31	33	34
Per Dozen	$9.00	10.50	12 80

COFFEE BOILERS

Retinned Cover

Nos.	07G	08G	09G
Size, inches	8 1/16x8 3/4	9 3/4x9 1/2	10 1/4x10 1/2
Capacity, qts	6	7 3/4	10 1/2
Wt per doz., lbs	50	57	76
Per Dozen	$17 50	21 20	27 50

PRESERVING KETTLES

Lipped.

Nos.	18G	20G	22G
Size, inches	7 3/4x8 1/2	8 3/32x8 1/2	9x4 1/2
Capacity, qts	2	2 1/2	4 1/2
Wt. per doz., lbs	15	16	20
Per Dozen	$5 70	6 60	7 50

Nos.	24G	26G
Size, inches	9 7/16x4 1/4	10 7/16x4 3/4
Capacity, qts	4 1/2	6
Wt. per doz., lbs	23	27
Per Dozen	$8 80	9 70

Nos.	28G	30G	32G
Size, inches	11 3/32x6 1/2	12 1/32x6 5/8	12 3/32x6 1/2
Capacity, qts	7 3/4	8 1/2	9
Wt. per doz , lbs	31	40	45
Per Dozen	$11 30	12 70	14 50

Nos.	36G	40G
Size, inches	13 3/32x6 3/8	14 3/32x7
Capacity, qts	13 1/2	16 1/4
Wt per doz., lbs	77	82
Per Dozen	$18 00	20 40

COFFEE POTS

Retinned Cover

Nos.	5G	15G	25G
Size, inches	4 5/32x7	5 1/4x7 1/4	5 3/4x8
Capacity, qts	1	1 3/4	2
Wt per doz , lbs	26	28	30
Per Dozen	$9 00	10.30	11 50

Nos.	35G	45G
Size, inches	6 1/4x9	6 3/4x9 1/2
Capacity, qts	3	4
Wt per doz . lbs	32	40
Per Dozen	$12 50	14 40

Enameled Cover

Nos.	180G	190G
Size, inches	10x5 7/8	10 1/16x6 1/4
Capacity, qts	7	8 1/2
Wt per doz , lbs	77	82
Per Dozen	$25 00	30 00

WEIR FROG COMPANY

Established 1882

Main Office and Plant, CINCINNATI, OHIO

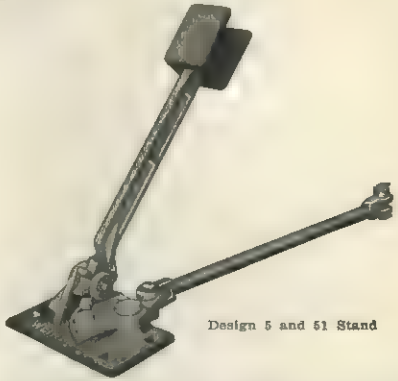
PITTSBURGH REPRESENTATIVE, ANDREW S. KARR, P. O. BOX 1254

Products

We manufacture all types of light and heavy rail frogs, switches, crossings, stands, for mines and industrials. Economical but durable constructions, that will give the longest wear, for the least money. We make a specialty of L. & N., C. & O. and N. & W. standard work.

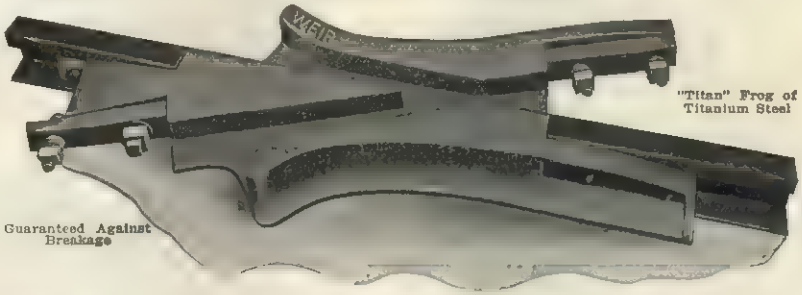
Design 4-35 and 6-65 Ground Throw Switch Stands

Design 4-35 and 6-56 ground throw switch stands for use with light rail switches. A substantial switch stand that will do the work required, at a very low price. Can be furnished with spring connecting rod.



Design 5 and 51 Stand

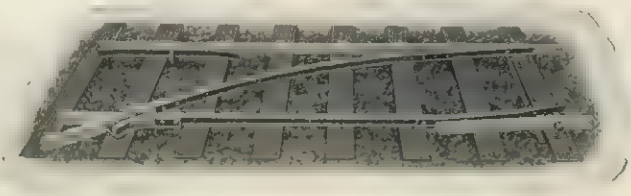
A stand arranged so that the lever throws parallel to the track, permitting its use in cramped quarters. Can be arranged so that the lever lies flat on the track, or so that the lever stands at an angle of 45°. Also furnished with spring connecting rod.



"Titan" Frog of Titanium Steel

Guaranteed Against Breakage

The Weir Titan Frog is the longest wearing frog on the market today, with the exception of solid manganese. No splice bars or fish plates required to install. Absolutely guaranteed against breakage; we will replace any that do not give satisfaction. The Titan frog is not cast iron, but is made of a solid piece of Titanium alloy steel. Will outwear built up frogs several times over.



Long Arm Turnout with Titan Frog

This illustrates a typical turnout using the Titan frog and is furnished for all standard angles and light rail sections up to 60 lb. The Titan frog turnout can be used either right or left hand, reducing the amount of stock necessary for the operator to carry on hand. The turnouts are furnished with or without filling rails, as the customer desires.

Weir Titan frogs, switches, switch stands, or complete turnouts, shipped immediately from stock.

Write to us or ask our Salesmen about the Weir Service Guarantee.

Write for Catalogue F, which contains complete tables for mine track work.

THE WEST VIRGINIA RAIL CO.

Mills and General Office: Huntington, W. Va.

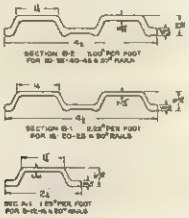
Manufacturers

Rails and Accessories; Frog and Switches; Steel Mine Ties

Switch Stands, Track Work of all Kinds, Deformed Concrete Bars

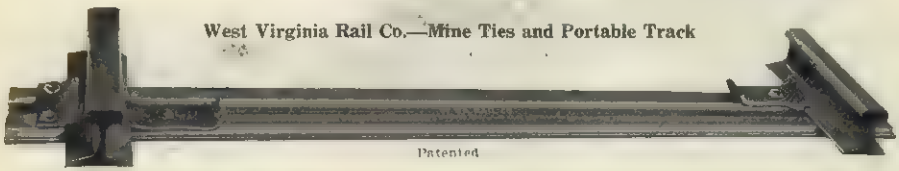
Illustrations show sections and construction of WEST VIRGINIA mine ties. These ties incorporate all features that experience has shown to be desirable. Tie section has great strength and resiliency, clips are of rolled steel of heavy section with wide bearing surface, stationary clip is double riveted and marked showing the size of rail that the tie is to fit. The rotary clip has a convenient hammering lug, deep shoulder positively holding the rails to gage, channel section closely fitting top of tie section when in locked position. Rotary clip always turns on the rivet as the rivet itself cannot turn in the tie due to an elliptical shoulder fitting an elliptical hole in tie. All rivets are driven hot in power presses giving a large tightly set head. With these ties tracklaying is simple and fast. Hammer the clip and the rail is clamped in position. No spreading of rails, no extra parts or tools to get lost.

When specified we can furnish portable track or ties with loose clips using T head bolts or portable track riveted to the ties. Large installations of each type are in successful use.



Method of bolting rails to ties used with bolted form of portable track and with all steel turnouts

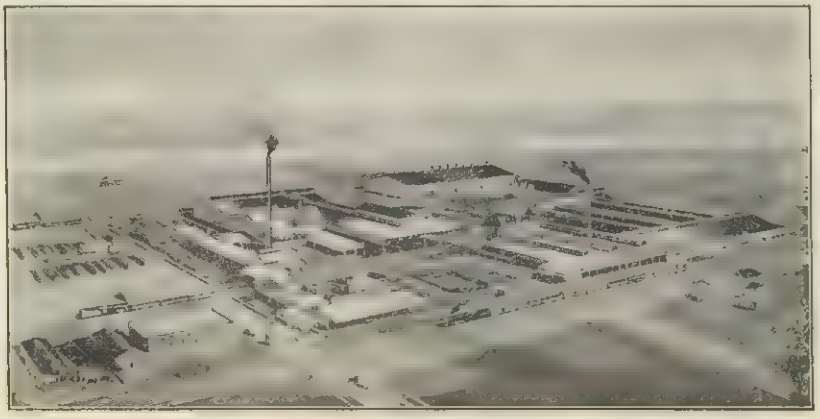
West Virginia Rail Co.—Mine Ties and Portable Track



Patented

Design No. 6 Tie has rotary clips inside as shown

Design No 5 Tie has rotary clips on outside



Rolled Products

This company has devoted seventeen years to the manufacture of high quality steel rails ranging from 8 to 50 pounds per yard inclusive.

Wherever there are mines you will find that the name of The WEST VIRGINIA RAIL CO. stands for quality, integrity and service.

Large stocks of rails, splices, angle bars, track bolts and spikes are carried and prompt shipments will be given at all times.

Relaying rails in all sizes are carried in stock for prompt shipment. Bulletin giving valuable information on rails, accessories and track sent free on request.

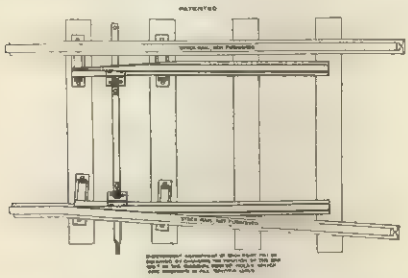
Complete Data on Rail Sections Shown on Page 959

Fabricated Products

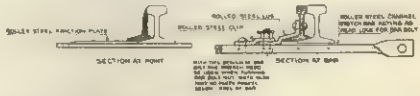
This company manufactures a complete line of track work including frogs, switches, room turnouts, crossings, crossovers, switch stands, portable track, complete steel turnouts and special track work.

This line embodies features of convenience and utility that cannot be found elsewhere. For data referring to turnouts, frogs and switches see pages 948 to 960.

Catalog, free on request, gives much additional information. Engineering service gladly given on any track and haulage problems. All material is guaranteed to give satisfactory service.



Standard Split Switch



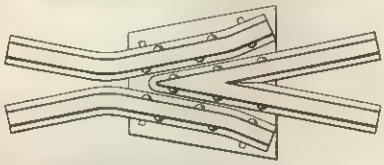
Standard Split Switch

Made of rails 12 to 60 pounds per yard. Switch with fittings as illustrated is standard for 4'-0", 5'-0" and 6'-0" length. 3'-0" switch is equipped with one bar and two plates. Rail braces furnished when specified. All bars, plates, clips and lugs are of steel, rolled to exact section. Note patented features not found on any other switch. Made in any length, either curved or straight and for any gage of track. Tables of the most practical frog and switch combinations free on request.

Solid Steel Frog, Complete with Bolts

Standard Solid Steel Frog

One piece solid cast steel frog incorporating all improvements of design and material that modern conditions have shown to be desirable. Reinforcing easer extensions at all ends, flange bearing feature, wide guard flare opening, designed to use standard length track bolts, can be spiked to wood ties or bolted with T-head bolts to our steel turnout ties. Made of a special analysis steel giving maximum strength and resistance to wear. Liberal lengths, heavy cross section and guaranteed to satisfy.



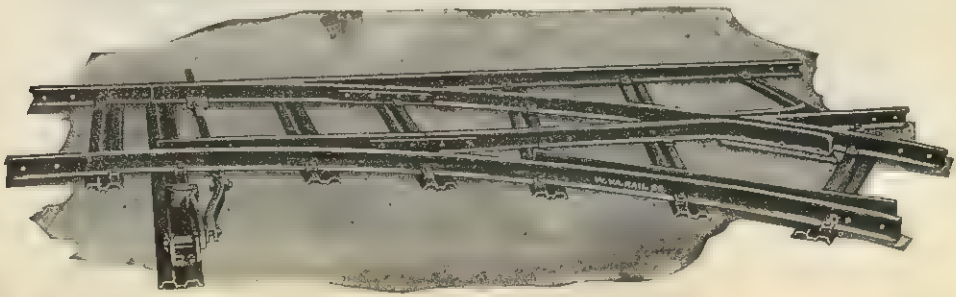
Riveted Plate Frog (Patent Applied For)

Riveted Plate Frog

Made of rails 12 to 60 pounds per yard and of any angle length or degree of curvature. All parts are securely riveted to substantial base plates and point is our one-piece construction. Made with plate as shown or with plate extended beyond throat. These are of the highest type of plate frogs produced and will give excellent service. Carried in stock for immediate shipment.

Complete Steel Turnout

We furnish the complete unit, the rail turnout alone or the set of ties with clips and bolts. Our design of clip holds the rails rigidly in position. Turnout may be handled in one piece or disassembled. Made to any gage and degree of curvature



Complete Steel Turnout

WM. WHARTON Jr. & CO., Inc.

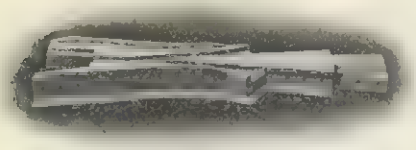
EASTON, PA.

Manufacturers of

Switches, Frogs, Crossings, Mine Car Frames, Steel Castings, Forgings, Etc.

Products

Switches, Frogs, Crossings, Guard Rails, Guard Rail Clamps, etc., for mine, yard and standard steam railroad tracks; Solid Manganese or Cast Steel Trackwork; Cast Steel Mine Car Frames and General Commercial Castings, both Electric and Converter Steel; Drop Forgings; Hammer, Press and Machine Forgings; Seamless Steel Gas Cylinders.



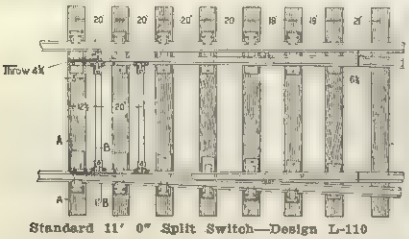
The Graham Flanged Frog, illustrated above, combines in a single track structure, the functions of the ordinary frog plus two guard rails, at a cost less than that of these three separate and distinct track fixtures. The guides are a part of the frog itself and control the movement of the wheels safely past the Frog Point independent of the track gage. It also has many times the life of an ordinary frog.

Made of either Solid Manganese Steel or Special Carbon Steel.

No part of the frog will catch chains, etc., hanging from cars.

Rigid Filled and Bolted Frog, Made of Rolled Rail

We manufacture a complete line of rigid and spring frogs, of plain rail and Manganese Steel constructions.



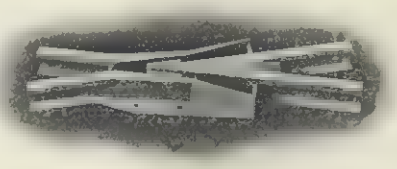
Standard 11′ 0″ Split Switch—Design L-110

Plain rail construction; points reinforced.

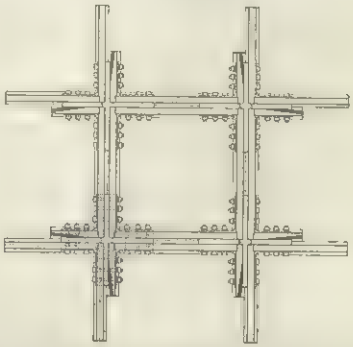
We also supply switches with Manganese Steel Points, for severe service.

The Small Solid Manganese Steel Frog illustrated below is intended for mine tracks where light rails are used, but where the service is severe. Manganese Steel possesses peculiar properties, in that it will stand up under terrific pounding, at the same time being extremely tough.

A frog of this construction gives the advantages of this superior metal at points of hard wear, without high first cost. We also furnish these frogs made of Special Carbon Steel.



Frog is all in one piece; no separate parts to shake loose. Arms shaped to join direct to connecting rails, or joint made by integral heel and toe blocks.



Standard 2-Rail Bolted Crossing

Various designs manufactured to meet different traffic conditions; Manganese Steel as well as plain rail.

All Manganese Steel manufactured by the Taylor-Hadfield (original) process by the Taylor-Wharton Iron & Steel Company, High Bridge, N. J., of which company we are a subsidiary.

WELLER MANUFACTURING CO.

Main Office and Works
1820-1856 North Kostner Ave., CHICAGO, ILL.

SALES OFFICES
NEW YORK BOSTON BALTIMORE PITTSBURGH BUFFALO DETROIT ST LOUIS OMAHA
SALT LAKE CITY SAN FRANCISCO

Products

Apron Conveyors; Belt Conveyors; Bucket Conveyors; Chain Conveyors; Drag Conveyors; Pan Conveyors; Spiral Conveyors; Bucket Elevators; Heavy Steel and Malleable Iron Elevator Buckets; Apron Feeders; Heavy Sheet Metal Work; Heavy Transmission Machinery; Weller Made Steel Chain; Bar and Rotary Grizzlys; Rotary Screens, etc.

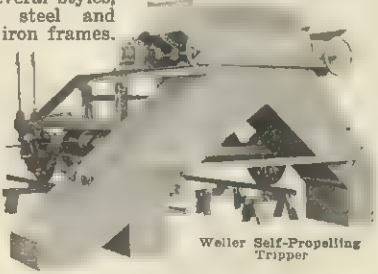
Belt Conveyors

Weller will design and manufacture complete conveying systems or supply any part of the equipment desired. Belt Conveyor Catalogue No. 35 shows standard layouts, special installations, etc., and will be of assistance in laying out new or replacing old installations—sent on request.

A Weller Belt Conveyor

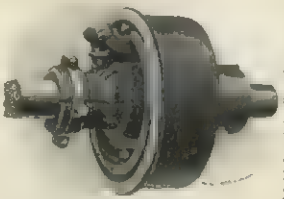
Weller Self-Propelling Tripper

Embodies features not found in any other on the market. Features fully covered by patents. Made in several styles, with steel and cast iron frames.



Weller Self-Propelling Tripper

Weller Expansion Friction Clutches



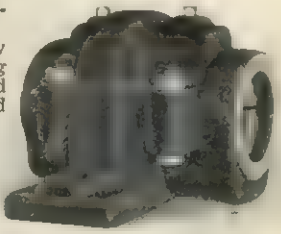
Weller Expansion Friction Clutch

Has fewer parts and is more powerful for the size than any other clutch on the market today. There is but one point of adjustment and the clutch is practically fool-proof. It gives practically the positive action of a jaw clutch combined with all the convenience of a friction clutch.

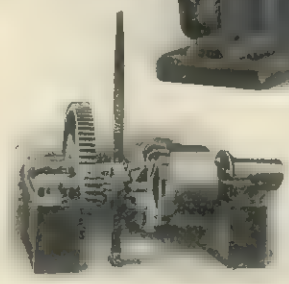
It makes no difference whether this clutch is in a dry, wet, clean or dirty place, it can be covered with dust and dirt as in a cement or stone crushing plant, or water can be dripping on it, and it will do the work just the same.

Collar Oiling Pillow Blocks

A short, heavy rigid collar oiling bearing designed for elevator and belt conveyor



Collar Oiling Pillow Block



Weller Car Puller

head shafts. We make a complete line of collar oiling bearings designed for the heaviest kind of service.

Transmission machinery catalogue on request.

Weller Car Pullers

A complete line for wire or manila rope, either single or double drum; gear or friction drive.

Car Puller Catalogue sent on request.

THE MARK OF QUALITY

THIS STAMP ON YOUR EQUIPMENT INSURES SERVICE

Steel and Combination Chain

We make chain for elevating and conveying purposes.

Send for Chain Bulletin.

HYATT ROLLER BEARING COMPANY

NEWARK DETROIT CHICAGO SAN FRANCISCO
WORCESTER MILWAUKEE HUNTINGTON MINNEAPOLIS PHILADELPHIA
CLEVELAND PITTSBURGH BUFFALO

Hyatt Roller Bearings for Conveyors

General Advantages

When applied to the drive, head, tail, bend, snub, take-up and idler pulleys of belt conveyors, Hyatt roller bearings insure uninterrupted operation of conveying systems. The true rolling motion and positive lubrication action of these bearings eliminate sticking pulleys, and their durability insures years of service without bearing adjustment or replacement.

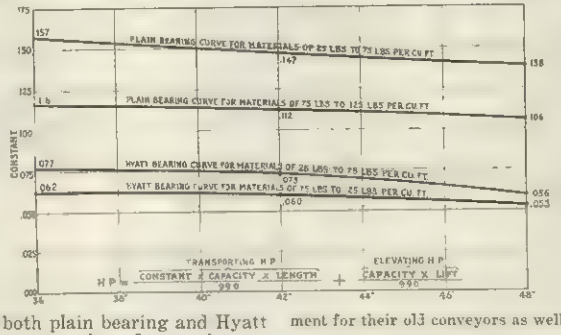
By eliminating the rubbing friction of plain bearings, Hyatt bearing pulleys cut power consumption and reduce belt stresses, allowing the use of lighter, less expensive belts which last longer on the freely turning idlers. Longer single span conveyors, lighter driving motors and lighter electrical equipment are made possible, resulting in these economies:

Lower first costs (belting and motors).
Lower operating costs (power, lubricant and labor).
Lower maintenance costs (belt and idler replacement).

Power Saving

Thorough tests have been conducted with the co-operation of the operating executives of a number of plants where both plain and Hyatt equipped conveyors are in daily use.

The important results of these tests are graphically shown on the adjacent chart. The "constants", as determined from the tests for both plain bearing and Hyatt roller bearing conveyors, are given for use in connection with the standard belt conveyor formula, which is also shown on the chart.


PLAIN BEARING CURVE FOR MATERIALS OF 25 LBS TO 75 LBS PER CU FT
PLAIN BEARING CURVE FOR MATERIALS OF 75 LBS TO 125 LBS PER CU FT
HYATT BEARING CURVE FOR MATERIALS OF 25 LBS TO 75 LBS PER CU FT
HYATT BEARING CURVE FOR MATERIALS OF 75 LBS TO 125 LBS PER CU FT
CONSTANT
157
147
138
112
106
077
073
062
060
056
053
HP = CONSTANT x CAPACITY x LENGTH / 990 + CAPACITY x LIFT / 990
TRANSPORTING H P
ELEVATING H P

To determine the power necessary to operate any conveyor with Hyatt bearing pulleys, first determine from the chart the value of the Hyatt "constant" for that width of conveyor and for the weight of material to be conveyed. Then substitute this value, with the other necessary data relative to the conveyor, in the formula, and solve for the horsepower.

The tests indicated that, based upon actual performance under actual operation conditions of speed and load, Hyatt roller bearing equipment reduces the horsepower consumption of a horizontal conveyor by at least 50%.

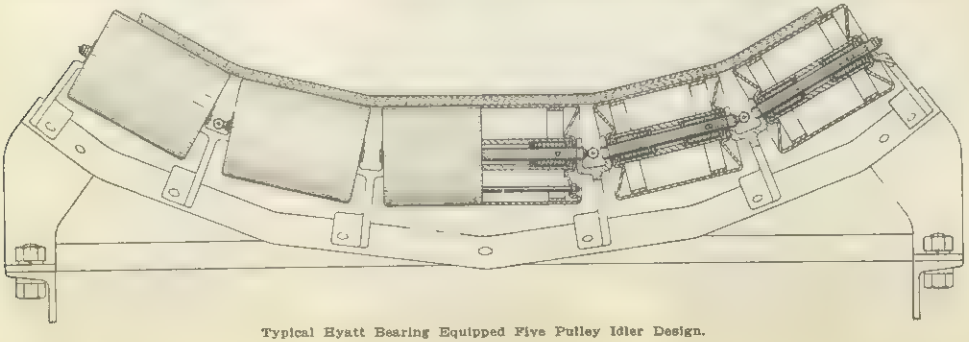
Trial Installations

There are in operation today thousands of plain bearing idlers whose period of economical use is past. The replacement of such by Hyatt equipped idlers will demonstrate conclusively the advantages of a Hyatt equipped conveyor over one equipped with plain bearings. Such replacement has in numerous instances settled the question of the selection of the proper bearing for new conveyors.

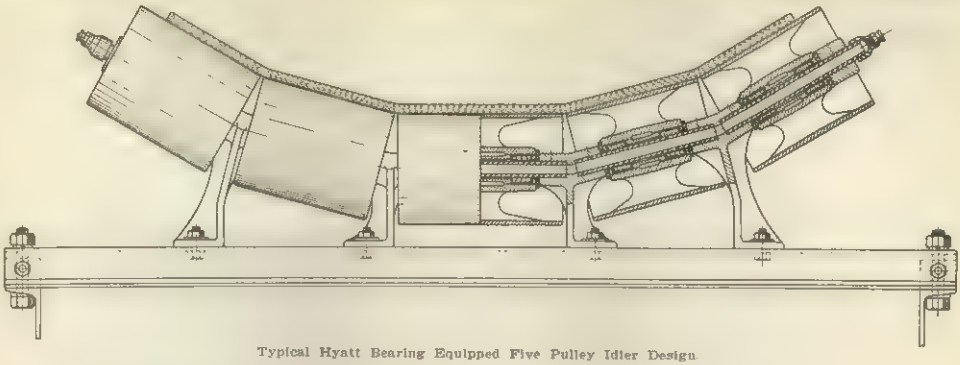
Many users have demonstrated to their satisfaction the economies and other advantages of Hyatt equipped conveyors by installing from ten to twenty-five Hyatt bearing idlers in their plain bearing conveyors. As a result of the performance of these idlers they have later purchased Hyatt bearing equipment for their old conveyors as well as for new installations.

How to Get Hyatt Bearing Conveyors

Conveyor manufacturers furnish as standard equipment, or will furnish on specification, their conveyors equipped



Typical Hyatt Bearing Equipped Five Pulley Idler Design.



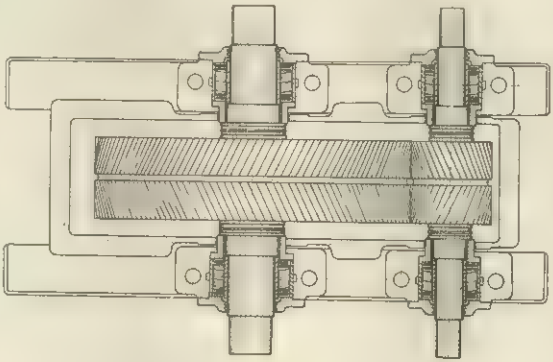
Typical Hyatt Bearing Equipped Five Pulley Idler Design

with Hyatt roller bearings in the drive, head, tail, take-up, bend, snub and idler pulleys. Hyatt conveyor engineers will assist you and your conveyor manufacturers in the designing of Hyatt equipped conveyors, without obligation.

Present Installations of Hyatt Bearing Conveyors

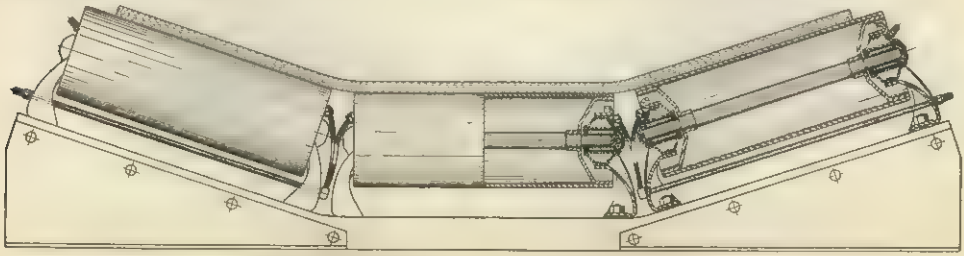
The following metal mining companies, quarries and companies in allied industries each have from one to twenty-four Hyatt equipped conveyors in operation. There are also many Hyatt bearing conveyors in other industries giving dependable and economical service.

De Bardeleben Coal Corp. Townley, Ala.
Woodward Iron Co., Woodward, Ala.
United Verde Copper Mining Co., Clarksdale, Ariz.
Ray Consolidated Copper Co., Hayden, Ariz.
Chicago, Wilmington & Franklin Coal Co., Orient, Ill.
Commonwealth Edison Co., Chicago, Ill.
Waukegan Generating Co., Waukegan, Ill.
United States Coal & Coke Co., Lynch, Ky.
Baltimore & Ohio R. R. Co., Baltimore, Md.
Bethlehem Steel Co., Buffalo, N. Y.
Kansas Exploration Co., Baxter Springs, Mo.
Federal Lead Co., Flat River, Mo.
Oronoga Zinc Corp., Oronoga, Mo.
St. Louis Smelting & Refining Co., St. Francois, Mo.
Nevada Consolidated Copper Co., McGill, Nev.
Gallup American Coal Mining Co., Gallup, New Mexico.
Battle Creek Gas Coke Co., Battle Creek, Mich.
Donner Union Coke Co., Buffalo, N. Y.
Pittsburgh Coal Co., Ashtabula, O.
Island Creek Fuel Co., Cincinnati, O.
Blackburn Coal Co., Cleveland, O.
McKinney Steel Co., Cleveland, O.
Diamond Alkali Co., Fairport Harbor, Ohio.
Dolomite Products Co., Maple Grove, O.
Cleveland Canton Coal Co., New Philadelphia, O
Portsmouth By-Product Coke Co., Portsmouth, Ohio.
Whitaker Glessner Co., Portsmouth, O.
Ohio River Edison Co., Steubenville, Ohio.



Hyatt Bearing Equipped Reduction Gear for Conveyor Drive

Republic Iron & Steel Co., Youngstown, O.
Pittsburgh Limestone Co. Ammondale, Pa.
James A. Hill Mining Co., Flinton, Pa.
H. C. Frick Coke Co., Gates, Pa.
G. W. Johnson Limestone Co., Hillsville, Pa.
Bethlehem Steel Co., Johnstown, Pa.
Cambria Steel Co., Johnstown, Pa.
Pittsburgh Crucible Steel Co., Midland, Pa.
H. C. Frick Coke Co., Newell, Pa.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
West Penn Power Co., Springdale, Pa.
Tennessee Copper Co., Copper Hill, Tenn.
Chief Consolidated Mining Co., Eureka, Utah
Utah Copper Mining Co., Magna, Utah.
Silver King Coalition Mining Co., Park City, Utah.
American Smelter & Securities Co., Salt Lake City, Utah.
Columbia Steel Co., Salt Lake City, Utah
Weirton Steel Co., Weirton, W. Va.
Berkshire Mining & Development Co., Mellen, Wis.
Granby Consolidated Mining Co., Anyox, B. C.
Hollinger Consolidated Mining Co., Hollinger, Ont.
Pacific Metals Co., Anataquea, Colombia, S. A.



Typical Hyatt Bearing Equipped Three Pulley Idler Design.

THE TIMKEN ROLLER BEARING CO.

CANTON, OHIO

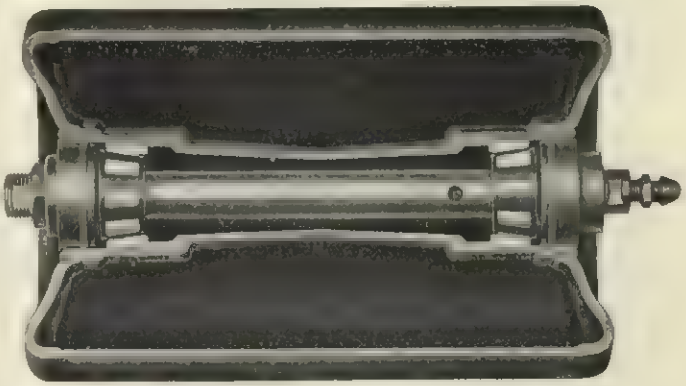
Timken Tapered Roller Bearings for Conveyors and Other Mine Equipment

Copyright 1924, T. R. B. Co.

Timken Tapered Roller Bearings have several distinct advantages over other bearings in conveyor service. Because Timken Bearings are tapered roller bearings, they carry in themselves, without the use of troublesome thrust washers, the thrust loads which are always present in conveyor service — particularly in troughing conveyors.

They have a greater load area than ball bearings and, therefore, outwear that type of anti-friction bearing.

Conveyor manufacturers take advantage of Timken adjustability and provide an easy adjustment for bearing wear which sooner or later develops in any conveyor bearing — but which is postponed in Timken-equipped conveyors because of the great load capacity, positive lubrication and high quality steel of the Timken Bearing. This insures longer life, greater economy of operation and freedom from trouble in Timken-equipped rolls. Because of these factors, Timken-equipped Conveyor Idlers are more easily maintained in proper alignment—saving unnecessary labor and expense.



Typical Installation of Timken Bearings in Conveyor Roll

Economies in Installation and Operation

Additional features of Timken-equipped Conveyors are:

1. Belt manufacturers recommend a lighter belt. Free turning pulleys insure longer belt life. An economy in first cost, as well as operating expense.

2. A smaller driving motor and lighter electrical equipment may be used. Another saving in cost of installation operation, and maintenance.

3. Saves lubricants. Lubricate only once or twice a year, depending on operating conditions.

4. Break-downs and lost work-hours are eliminated, because of the long life of Timken Bearings.

Manufacturers of Timken-Equipped Conveyors

These manufacturers of conveying equipment have standardized on Timken Roller Bearings in all anti-friction bearing-equipped conveyors manufactured by them:

The Brown Hoisting Machinery Company, Cleveland, Ohio.
The Robbins Conveying Belt Company, New York, N. Y.
The Stearns Conveyor Company, Cleveland, Ohio.
The Variety Iron & Steel Works Company, Cleveland, Ohio.

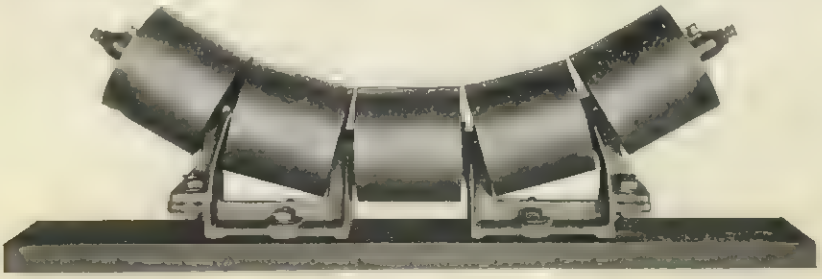
Other conveyor manufacturers will quote on conveyors equipped with Timken Bearings upon application.

Other Uses of Timken Bearings

Other uses of Timken Bearings in mines:

Blowers and Fans	Pumps	Bend
Cranes	Reduction Gear Units	Snub
Electric Motors	and the drive	Take-up
Mine Cars	Head	and other pulleys
Mine Locomotives	Tail	of belt conveyors.

See mine car section for details of construction of the Timken Tapered Roller Bearing.



Complete Timken-Equipped 5-Roll Idler

WESTINGHOUSE ELECTRIC & M'F'G. CO.

EAST PITTSBURGH, PA.

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA, PA.

Westinghouse-Baldwin Locomotives

Westinghouse-Baldwin locomotives and locomotive equipments are manufactured in sizes and capacities suitable for any application involved in mining service. They are classified as follows, and can be furnished in either standard or low height:

1. Trolley locomotives. 2. Storage battery locomotives. 3. Combination locomotives.

Construction

The side frames of these locomotives are of cast steel open construction. These are known as "Barsteel" frames and have the following distinct advantages:

1. Maximum strength. 2. Increased ventilation. 3. Accessibility for inspection, lubrication and adjustment. 4. Ease with which locomotive can be re-railed.

Wheels and Axles

The wheels may be of cast iron with chilled treads, rolled steel or cast iron centers with steel tires. In any case they are mounted with a press fit on high grade forged steel axles.

Standard Trolley Type Locomotive

Gears

Single reduction gearing is provided, enclosed in split, dust-proof gear cases. The gears and pinions are heat treated steel with machine-cut teeth.

Journal Boxes

The journal boxes are of cast iron with collar cast integral, the lid being constructed to take the end thrust. Gibs of special design are used, permitting the removal and overhauling of the journal box, longitudinally, without removing the pedestal cap or dropping the axle.

Driving Springs

The weight of the locomotive is supported by semi-elliptic leaf springs, placed directly over the journal boxes. These springs allow inherently a greater vertical movement than do coil springs, insuring an exceptionally easy riding and good tracking locomotive. They are carefully heat-treated during manufacture to insure maximum life and resiliency.

Brakes

The brakes are of the automatic self-locking type operated by a screw and capable of locking all the wheels.

They are very easy to manipulate and will meet the most exacting requirements of safety.

Motors

The split frame, totally enclosed motors used are proportioned for the rating necessary to give the maximum draw bar pull possible with the weight of locomotive on which they are mounted. These features as well as a high continuous capacity compared to the one hour rating insures continuous operation at an extremely low maintenance expense.

Controllers

Controllers are of the magnetic blowout drum type. Full magnetic controllers are recommended for larger main haulage locomotives and are giving excellent results. A complete line is available.

Trolley Locomotives

The larger trolley locomotives either singly or in tandem are used for main haulage. The three smaller sizes listed equipped with a cable or traction reel are used for gathering.

Combination Locomotives

Combination locomotives can be operated from either the trolley or the battery, which feature makes it possible to operate them anywhere that track is laid.

This type of locomotive can be supplied in the same sizes as the trolley types, the many advantages of combination operation making them very desirable for both haulage and gathering service.

Net Weight Tons	WHEELS CHILLED IRON		WHEELS STEEL TIRED	
	Rated D B.P. in Lbs. on Level Track	Max. Tractive Effort in Lbs.	Rated D B.P. in Lbs. on Level Track	Max. Tractive Effort in Lbs.
Two-Motor Locomotives.				
4	1600	2000	2000	2400
6	2400	3000	3000	3600
8	3200	4000	4000	4800
10	4000	5000	5000	6000
13	5200	6500	6500	7800
15	6000	7500	7500	9000
20	8000	10000	10000	12000
25	10000	12500	12500	15000

Gathering Locomotives

There are two types of reels supplied on Westinghouse-Baldwin gathering locomotives.

1. Conductor-cable reels, by means of which the locomotive can be operated over tracks along which the trolley wire has not been extended, being limited only by length of cable carried on the drum. In this way the empty as well as the loaded cars can be handled by the locomotive. Conductor-cable reels can be subdivided into two classes.

(A) Mechanically driven from locomotive running gear.

(B) Motor driven reels.

2. Traction rope reels by which cars may be pulled from any point towards the locomotive, within the limits of the length of steel rope carried on the drum. The locomotive cannot travel beyond the limits of the trolley wire nor can empty cars be pushed to the working places.

6 Ton Stock Locomotive, with YR-2 Reel

Motor Driven Conductor-Cable Reels

The type YR-2 gathering reel is an insulated, horizontal drum driven through gearing by a separate shunt wound motor mounted within the drum itself. The principle of spooling electric cable horizontally is correct and economical.

The superior features of this reel are:

1. All parts are enclosed, thereby protected.

2. The design of the reel permits its being mounted at the end rather than on top of the locomotive, and therefore it does not intrefere with easy access to other electrical or mechanical parts.

Westinghouse-Baldwin Locomotives—Continued

3. All parts are accessible for inspection without the necessity of removing the reel from the locomotive.

YR-2 Reel

4. The use of a specially designed, shunt wound motor instead of the series winding ordinarily employed provides constant torque at all speeds. The resulting even tension keeps the cable off the road and from under the locomotive wheels, obviously prolonging the cable life.

5. By guiding the cable evenly onto a horizontal drum and leading it through porcelain guides, snarling, tearing, and chafing are prevented and the annoyance of short circuits and burning so prominent in other winding schemes are eliminated. By virtue of this feature and the saving effected by constant torque, cable maintenance is reduced at least one-half.

Traction-Reel Locomotives

The Westinghouse-Baldwin traction-reel locomotive has a motor-driven reel on which is wound a steel cable. The locomotive is stationed on the cross-entry track with the brakes set and the cable is run into the room by a switchman who hooks the cable to a loaded car. The reel motor is then started and the car drawn out on the cross-entry track.

Magnetic Control

On account of the heavy currents involved in the operation of large trolley locomotives magnetic control is recommended. The advantages of this type of control are—ease of operation—safety for the operator on account of there being no heavy currents broken or handled at operator's end of the locomotive—positive magnetic blow outs insure immediate suppression of arcs resulting in long life of switch contacts and exceptionally low maintenance, and location of main control apparatus at rear end of locomotive makes switches, etc., accessible, and simplifies wiring.

Locomotives for Stock Shipment

The experience of the Westinghouse-Baldwin Companies in supplying locomotives to coal mines has made it possible to know what weights and sizes of trolley locomotives are most in demand and to carry them in stock completely assembled and ready for immediate shipment. This is a distinct advantage to the mine operator in that the time required to make shipment is reduced in many cases from several weeks to a few hours.

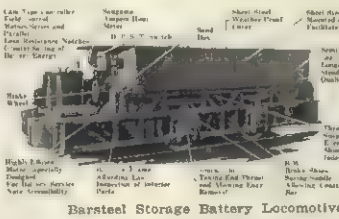
Such locomotives are available in the following weights for operation on 42 or 44″ track gauge, and with a 250 or 500 volt trolley circuit:

4-ton with YR-2 Reel,	10-ton, Haulage Only.
6-ton with YR-2 Reel,	13-ton, Haulage Only.
*8-ton, Haulage Only.	15-ton, Haulage Only.

*Also available for operation on 36″ gauge

Storage Battery Locomotives

The storage battery locomotive is particularly adaptable to gathering and underground haulage, where there are difficulties in erecting and maintaining trolley wires and in bonding the rails, or where wooden rails are used. It is also suitable for general work above ground, and for such service, is usually equipped with a cab or canopy.



Barsteel Storage Battery Locomotive

Either the lead-acid or the Edison type of battery can be furnished in a range of sizes as necessitated by the particular service requirements.

Storage Battery Locomotives are designed for all requirements. Following are the common standards:

Nominal Chassis Weight	Rated D. B. P.	Rated Speed in M.P.H.	Normal Battery Capacity in KW. Hours
6000	1000	3.5	11.4 to 22
8000	2000	3.5	23.0 to 35
10000	3000	3.5	36.0 to 48

The table shown above lists our standard sizes, but locomotives can be supplied in unusual sizes to meet the requirements of your particular application.

Electrically Driven Larry Cars

The Westinghouse Company manufactures a complete line of electrical apparatus for all types of Larry cars, such as slate dumping cars, ore cars, scale cars, transfer cars, concentrator cars or any other electrically self-propelled burden bearing cars used in mines, quarries, smelters, fertilizer plants, coke oven plants or other industries.

Electrically Driven Larry Car

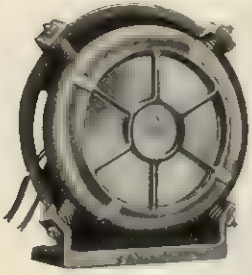
Complete electrical equipment usually consists of one or more motors, controller, resistance, trolley pole, circuit-breaker and lightning arrester.

Either 250 or 500 volt motors furnished for these equipments can be supplied for either nose or cross bar suspension. The line includes both box type and split frame motors, so as to meet all normal requirements of the service.

Hardly any two Larry cars will require exactly the same equipment. It is, therefore, necessary to consider the limiting dimensions, such as gauge, horsepower and speed required, size of axles etc., in selecting the proper equipment for any given type of car. Westinghouse engineers have had years of experience with such applications and are at the customer's service to render every possible assistance in the selection of the electrical equipment most suitable for his particular type of car.

MINE LOCOMOTIVE HEADLIGHTS

Westinghouse Mine Locomotive Headlights have been designed to withstand the severe conditions under which they are used, an carry the lamp on a spring suspension which will adequately protect the filament from breakage due to vibration and jars.



Front View

Side View

The special features of these headlights are:

1. The frame, case and cover are made of high grade gray cast iron, heavy enough to withstand normal abuse.

2. The lens holder is fitted to the case with a threaded joint, which, with rubber gaskets, tightly seals the headlight and makes it suitable for use in gaseous mines.

3. The case (which contains the socket and lamp) is entirely suspended from six springs. These springs oppose each other and are always in tension. Thus, the spring suspension is equally effective in all directions, assuring longest possible lamp life.

4. A lamp grip socket is provided for medium base lamps of from 23 to 94 watt capacity of the concentrated filament type in the G-No. 18½ and G-No. 25 lamps.

5. Where headlights are to be operated on circuits of more than 250 volts, a resistance is supplied. This resistance is housed in a full cast iron case of sturdy construction, which is superior to the sheet steel housing usually furnished.

Type S Headlight

This new Westinghouse Type S is a "permissible" headlight for gaseous mines. It is sufficiently rugged to withstand the hardest possible operating conditions, and so compact as to fit in the available space at the ends of mine locomotives with ample clearance to safeguard against breakage. The lamp, its receptacle and the reflector are mounted in a spring-suspended frame which protects the lamp filament from breakage due to vibration and jars.

Type S Headlight

The housing and front cover are made of high grade cast iron, heavy enough to withstand a terrific amount of abuse without injury.

The front cover is fitted to the case by machined threads with cork gaskets, each side of glass front allowing an inch of actual creepage distance in all joints, so that any gases ignited within the headlight will be cooled before reaching the outside. The cover of this headlight has a threaded fit of fully an inch and a machined flange in addition. The glass front is ½ inch thick to conform with requirements.

The reflector-socket and lamp are assembled in a framework which is suspended on springs within the cast iron housing.

GEO. D. WHITCOMB COMPANY

Main Office and Works

ROCHELLE, ILLINOIS, U. S. A.

Sales Representatives in All Principal Cities

Gasoline, Storage Battery, Trolley and Combination Locomotives

Products

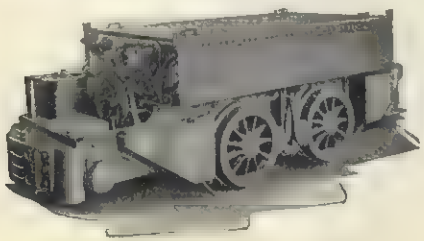
Gasoline Locomotives for Mines. Made in sizes from 3 tons to 9 tons and in gauges from 18″ to 60″.

Mining Type Gasoline Locomotive

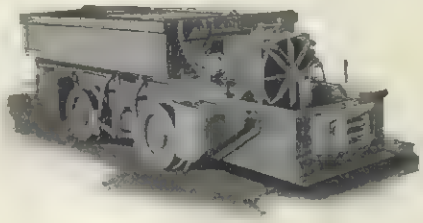
Gasoline Locomotives—Cab Type. Made in sizes from two and one-half to twenty-five tons on drive wheels and in gauges from 18″ to 60″.

Cab Type Gasoline Locomotive for Surface Haulage

Electric Storage Battery Locomotives for Mines. Made in both spur gear and worm drive and in gauges from 18″ to 60″, and in sizes from 2-ton to 20-ton weight on the drive wheels.



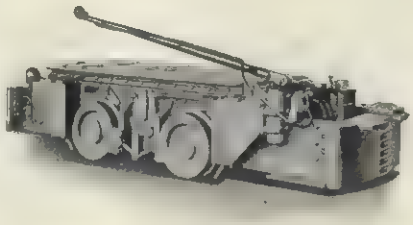
Worm Drive Storage Battery Locomotive.



Permissible Storage Battery Locomotive

Trolley Locomotives from 3-ton to 20-ton operating either with or without cable reel. Made in all gauges from 18″ to 60″.

Worm Drive Trolley Locomotive



Locomotive With Reel.

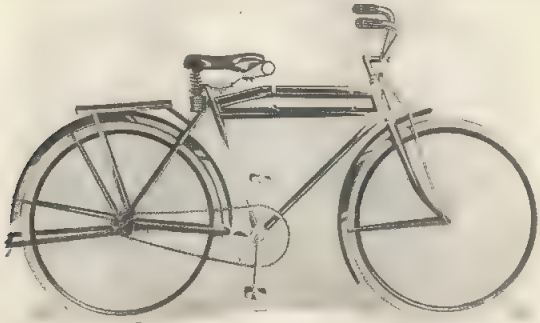
Bulletins Descriptive of Any Size or Type Gladly Mailed on Request.

WORLD BICYCLES.

GUARANTEE—World Bicycles are fully guaranteed against any imperfections in material or workmanship, and repairs or replacements will be made free of charge, provided parts claimed to be defective are delivered to us transportation charges prepaid, a separate letter to be mailed in order to help us identify the parts. This guarantee expires December 31st of the year during which purchase was made.

MOTORBIKE MODEL No. 110.

The Strongest and Easiest Running Heavy Service Bicycle Ever Built. Has a Motorcycle Appearance.

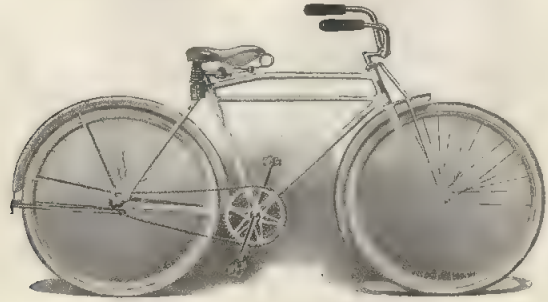


FRAME—Flush joint, 1-inch high carbon steel tubing, extra heavy and strongly reinforced 22-inch frame measuring 20 inches at seat post. Twenty-inch frame measures 18 inches at seat post.
WHEELS—28 inch.
TRUSS FORK—Motorcycle style as illustrated, made of 17-gauge high carbon steel tubing, handsomely decorated.
CRANK HANGER—Drop forged, one-piece, 7-inch; can be removed without disturbing cups.
FINISH—Handsomely enameled in carmine, decorated with fancy white head and seat post mast. Four coats, hand rubbed. Can also furnish in brown enamel with white head and seat post mast.
FRONT HUB—New Departure
COASTER BRAKE—New Departure
RIMS—One-piece maple enameled to match frame
CHAIN—$\frac{1}{2}$-inch roller.
SPOKES—HIGHEST quality, 36 in front, 36 in rear.
TIRES—New U. S. Giant, chain tread, guaranteed, single tube.
HANDLE BAR—Motorcycle style, adjustable extension, long rubber grips.
SADDLE—Motorbike style.
PEDALS—Rubber.
METAL TANK.
GUARDS—Deep drop sides.
STAND—Kick-up.
PACKAGE CARRIER—Strongly made, detachable.

Motorbike Model No. 110 As illustrated, including tank and carrier, color, carmine $66 00

Tool Bags are not included in prices of Bicycles. Can be furnished at additional cost of $1.00.

MOTORBIKE MODEL No. 109



Details of construction same as Motorbike Model No 110 listed above, but without the tank or carrier.

Motorbike Model No. 109—As illustrated, color, carmine.. .... Each, $63.00

WORLD BICYCLES.

MODEL No. 107.

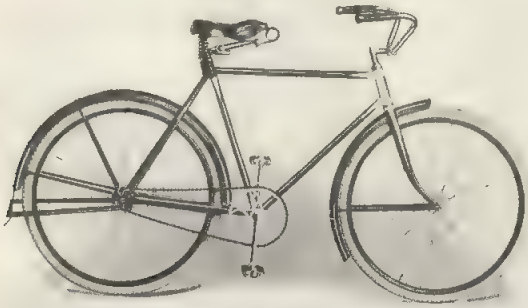
This machine is especially designed for short, stout men or growing boys too old for juvenile models and who buy for the future. A man's machine of highest grade throughout with extra low saddle position, curved frame with truss bar and trussed fork, built to meet all requirements of heavy riders or hard service.

FRAME—22-inch, measuring 20 inches at the seat post mast, on account of 2-inch drop in top bar, made of 1-inch, 19-gauge high carbon steel tubing, flush joints.
WHEELS—28-inch.
FORK—Trussed motorcycle style, extra strong, drop forged crown, seamless fork sides; 17-gauge.
CRANK HANGER—Drop forged one-piece, 7-inch cranks, removable without disturbing cups.
FINISH—Handsomely enameled in carmine, decorated with fancy white head and seat post mast. Four coats, hand rubbed. Can also furnish in blue finish with white decorations.
FRONT HUB—New Departure.
COASTER BRAKE—New Departure.
RIMS—One-piece maple, enameled to match frame.
CHAIN—$\frac{1}{2}$ inch roller.
SPOKES—Highest quality, 36 in front, 36 in rear.
TIRES—New U. S. Giant, chain tread, guaranteed, single tube.
HANDLE BAR—Adjustable, forward extension with long rubber grips.
SADDLE—Motorbike style.
PEDALS—Rubber.
GUARDS—Drop side, front and rear.
STAND—Kick-up.

Model No. 107—As illustrated. Colors: carmine or blue ..... Each, $61.00

Tool Bags are not included in prices of Bicycles. Can be furnished at additional cost of $1.00.

MODEL No. 105.

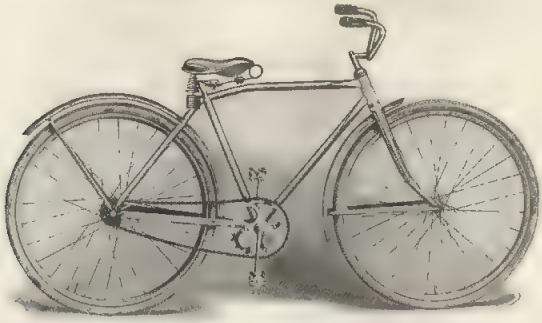


The zenith of bicycle quality. A machine unequaled in material, workmanship and finish. Built for the discriminating buyer who wants the best that can be produced.
FRAME—Either 20 or 22-inch; 1-inch, 19-gauge, high carbon steel tubing, oval rear stays and forks, flush joints.
WHEELS—28 inch.
FORKS—Drop forged crown, seamless fork sides; 17-gauge.
CRANK HANGER—Drop forged, Diamond pattern, one-piece, 7-inch cranks; removable without disturbing cups.
FINISH—Handsomely enameled in carmine, decorated with fancy white head and seat post mast. Four coats, hand rubbed. Can also furnish in blue finish with white decorations.
FRONT HUB—New Departure.
COASTER BRAKE—New Departure.
RIMS—One-piece enameled to match frame.
SPOKES—Highest quality, 36 in front, 36 in rear.
CHAIN—$\frac{1}{2}$-inch roller.
TIRES—New U. S. Giant, chain tread, guaranteed, single tube.
HANDLE BAR—Adjustable, forward extension with long rubber grips.
SADDLE—Motorbike style.
PEDALS—Rubber.
GUARDS—Deep drop side.
STAND—Kick-up.

Model No. 105—As illustrated. Colors, carmine or blue..... Each, $57.00

WORLD BICYCLES

GROWING BOYS' SPECIAL MODEL No. 4



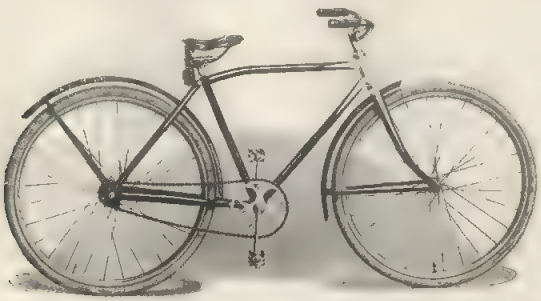
FRAME—Built on regular 20-inch Diamond frame lines, but with 2-inch drop of upper bar, at seat post mast, this making a specially desirable model with full size wheels and tires. Made of 1-inch, 19-gauge high carbon steel tubing, flush joints.
WHEELS—28 inch
FORK—Drop forged, oval crown seamless fork sides; 17-gauge.
CRANK HANGER—Drop forged; 7-inch cranks, one-piece, removable without disturbing cups.
FINISH—Handsomely enameled in carmine, decorated with fancy white head. Four coats, hand rubbed
FRONT HUB—New Departure
COASTER BRAKE—New Departure
RIMS—One-piece maple, enameled to match.
CHAIN—⅜-inch roller
SPOKES—Highest quality, 35 in front, 36 in rear
TIRES—New U. S. Nonpariel, guaranteed, single tube
HANDLE BAR—Adjustable, forward extension with rubber grips.
SADDLE—Troxel Top Notch.
PEDALS—Rubber.
GUARDS—Oval front and rear.
STAND—Kick-up.

Growing Boys' Special Model No. 4—As illustrated . . . . . Each, $57 00

Tool Bags are not included in prices of Bicycles. Can be furnished at additional cost of $1.00.

BOYS' JUVENILE MODEL No. 101.

The best constructed and most highly finished Juvenile bicycle ever built. A real man's bicycle built in boy's size

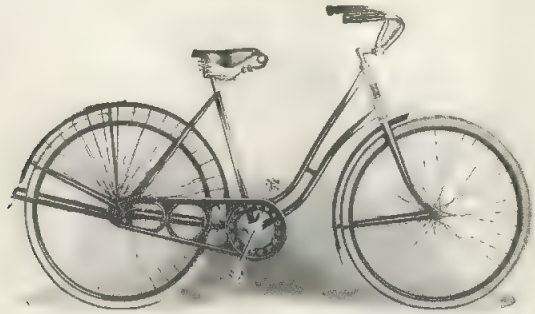


FRAME—16x18-inch, made of 1-inch, 19-gauge, high carbon steel tubing; flush joints throughout.
WHEELS—26-inch.
FORK—Drop forged crown, fork sides nicely tapered; 18-gauge.
CRANK HANGER—One-piece, 6½-inch crank, nickel plated.
FINISH—Handsomely enameled in carmine with white head. Four coats, hand rubbed.
FRONT HUB—New Departure.
COASTER BRAKE—New Departure
RIMS—One-piece maple, aluminum finish.
CHAIN—⅜-inch.
SPOKES—28 in each wheel.
TIRES—Juvenile, single tube, guaranteed.
HANDLE BAR—Juvenile adjustable, short rubber grips
SADDLE—Juvenile coil spring.
PEDALS—Juvenile rubber.
GUARDS—Front and rear.
STAND—Kick-up.

Boys' Juvenile Model No. 101—As illustrated, but with stand. . . . . Each, $53.00

WORLD BICYCLES.

LADIES' MODEL No. 103



A Finely Constructed and Most Highly Finished Ladies' Bicycle Ever Made.

FRAME—Drop pattern, 20-inch. Made of high carbon steel tubing, reinforced. Flush joints.
WHEELS—28-inch.
FRONT FORK—Drop forged crown, seamless fork sides; 17-gauge.
CRANK HANGER—Drop forged, Diamond pattern, 6½-inch, one-piece cranks, removable without disturbing cups.
FINISH—Handsomely enameled in blue, decorated with fancy white head and seat post mast. Four coats, hand rubbed.
FRONT HUB—New Departure.
COASTER BRAKE—New Departure.
RIMS—One-piece maple, enameled to match frame.
SPOKES—Highest quality, 36 in front and 36 in rear.
CHAIN—⅞ inch roller.
TIRES—New U. S. Giant Chain Tread. Guaranteed. Single tube.
HANDLE BAR—Adjustable, forward extension with long rubber grips.
SADDLE—Ladies' Comfort Padded coil spring.
PEDALS—Ladies' rubber.
GUARDS—Front and rear, rear guard laced to protect skirts. Full chain guard covering front and rear sprocket.
STAND—Kick up.

Ladies' Model No. 103—As illustrated . . . . . Each, $63 00

Tool Bags are not included in prices of Bicycles. Can be furnished at additional charge of $1.00.

GIRLS' JUVENILE MODEL No. 102

A Strictly High-Grade Ladies' Bicycle Built in Junior Sizes.

FRAME—17-inch, made of 1-inch, 18-gauge, high carbon steel tubing; flush joints throughout.
WHEELS—26-inch.
FORK—Drop forged, crown, fork sides nicely tapered; 18-gauge.
CRANK HANGER—5½-inch, one-piece, nickel plated.
FINISH—Handsomely enameled in blue with white head. Four coats, hand rubbed.
FRONT HUB—New Departure.
COASTER BRAKE—New Departure.
RIMS—One-piece maple, aluminum finish.
CHAIN—⅞ inch.
SPOKES—28 in each wheel.
TIRES—Juvenile, single tube, guaranteed.
HANDLE BAR—Juvenile adjustable, short rubber grips.
SADDLE—Juvenile coil spring.
PEDALS—Juvenile rubber.
GUARDS—Front and rear; rear has lacing.
STAND—Kick up.

Girls' Juvenile Model No. 102—As illustrated, but with stand . . . . . Each, $54 00

Wood shavings scattered about add a realistic touch to any display of tools

The handy man around the house and how to sell him

Specific plans any hardware merchant can use to develop his household tool market

By R. W. Crane

THE story is told of a man who once traveled the world, seeking in vain for a fortune. Back home he found a gold mine in his yard.

Like the gold mine in this story, the household tool market lies at the door of the hardware dealer. But both mine and market must be worked to produce results.

In every State in the Union, families use tools. The demand is national. However, in selling this vast market, there are certain things the wise hardware merchant must consider.

How about your stock of tools? Is it complete? Is it large enough? Is it too large? Is it well cared for? Is it the right kind—that is, well selected?

In discussing this stock proposition, let us first of all understand each other. If you have

a carpenters' and mechanics' trade, by all means stick to quality lines—the best on the market.

If you are in a factory community where precision tools are in demand, do not neglect this business in going after the household trade. Experts and professionals insist on the best tools money can buy, but the household trade wants only popular-priced tools.

Of course, in selling the householder, quality is a consideration and a big one, but the tools must be moderate in price. The householder will not, as a rule, pay the same price that a mechanic will pay. A successful tool man recently made this remark: "Too often, hardware dealers make the mistake of trying to sell mechanics' tools to the household trade."

Now don't overlook the fact that there is a big household tool business at hand in most every community. To meet this demand, a good part of your stock should be medium-priced tools with a distinct utility value. But in going after this business don't neglect your mechanics' trade.

It is necessary, however, not to allow your stock to become too large. The average store cannot handle too many lines of tools or too varied a variety. There is a happy medium where your line is complete enough for ordinary requirements — complete enough to offer a choice between the economical and popular-priced tool for household use and the best for the mechanics' trade. Be especially careful to guard against stocking items that only add to the inventory without increasing sales.

The arrangement of tools in your store is something which should receive careful consideration. They should be displayed so as to make selection easy. This is especially true when an

Various uses to which tools can be put are pictured in the advertisements above—a good idea

You've heard of food cafeterias. Here's a "hardwareteria" on the same plan. This novel department is in the store of Chas. Brown & Sons, San Francisco, Cal.

appeal is being made to the householder, who oftentimes does not know the name of the tool he is after and must see it to identify it.

Many efficient types of store fixtures have been developed in the last few years which aid the hardware dealer greatly in properly showing his stock of tools. Most of these are of the panel door type. The stock is sampled on swinging panel doors with the selling stock carried in drawers behind them.

The majority of tools can be well displayed on these panel doors. The various lines and

Count the articles in this window if you can. The Bunting Hardware Company, of Kansas City, Missouri, utilized every inch of space

sizes can be properly classified and arranged and each item can be easily marked with the price. Thus the householder in search of a tool can make a selection, giving due consideration to price, without the embarrassment of admitting ignorance of tools or asking for cheaper goods.

Three ways to sell tools

The three great avenues of approach in selling tools to the householder are the show window, the mails and the newspaper. The aggressive dealer uses them all if he can. He realizes that each one supplements the other.

Every hardware dealer who has tried it out thoroughly will agree that direct-by-mail advertising pays. It is essential, however, that the mailing list be a good one. A good list is fairly easy to obtain, but requires a certain amount of work to keep up.

From your list of charge customers, from city records and from many other sources, you can get your mailing list. However, the list must be classified under such headings as "home owners," "newlyweds," "farmers," "mechanics," "auto owners," and so on. It should also be gone over at intervals in order to revise it and eliminate "dead wood."

In selling tools to householders, letters sent to a list of home owners have been found effective. Below is a sample letter of this kind:

Mr. J. B. Holmes,
Ontario, N. J.
Dear Mr. Holmes:

When you have to put up new

(CONTINUED ON PAGE 68)

Displaying tools on panel doors helps the customer select what he wants

TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.

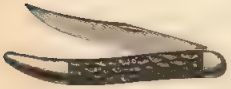
Imported

One large spear blade; blue glazed finish.

Per dozen

No. 6820—Brown pressed steel handle; length 3⅛ in...$3.00

One-half dozen in a box.

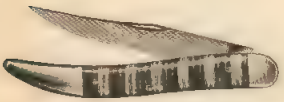


One long clip blade, glazed finish. Polished steel bolster. Brass lined.

Per dozen

No. 9488—Stag handle; length 4⅝ in. $12.00

One-half dozen in a box.

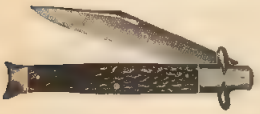


One large clip blade; glazed finish; polished steel bolster. Brass lined.

Per dozen

No. 9488PYR—Pyralin handle; length 4⅝ in. $12.00

One-half dozen in a box.

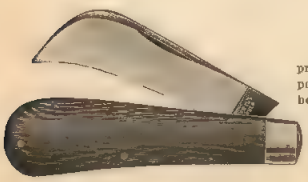


One long clip blade; half crocus polished. Polished steel bolster and cap. Brass lined.

Per dozen

No. 9418—Stag handle; length 3⅞ in. $12.00
No. 9418PYR—Pyralin handle; length 3⅞ in. 12.00

One half dozen in a box.

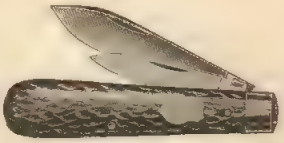


One large pruning blade; polished steel bolster.

Per dozen

No. 9215—Rosewood handle; length 4 in. $12 00

One-half dozen in a box.

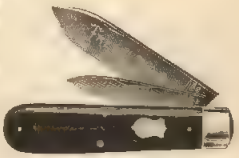


Two blades, one large spear and one pen. Blue glazed finish. Brass lining. Polished steel bolster.

Per dozen

No. 9263—Stag handle; length 3¼ in. $6.00
No. 9263C—Stag handle with clip blade, otherwise same as No. 9263 ..... 5.00

One-half dozen in a box.

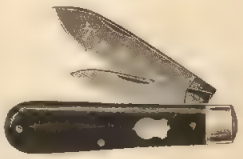


Two blades, one large spear and one pen. Blue glazed finish. Brass lining. Polished steel bolster.

Per dozen

No. 9261—Black handle; length 3¼ in. $6.00

One-half dozen in a box.

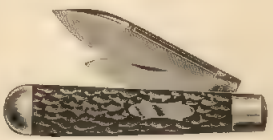


Two blades, one large spear and one pen. Blue glazed finish. Brass lining. Polished steel bolster.

Per dozen

No. 9260—Rosewood handle; length 3¼ in. $6.00

One-half dozen in a box.

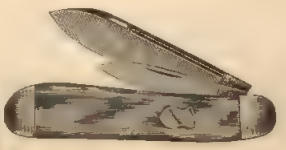


Two blades, one large spear and one pen. Half crocus polished. Brass lined. Polished steel cap and bolster.

Per dozen

No. 9741—Stag handle; length 3¾ in. $12.00

One-half dozen in a box.



Two blades, one large spear and one pen Brass lined Polished steel cap and bolster.

Per dozen

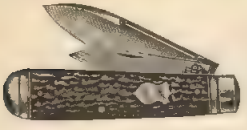
No. 9699N.H.—New horn handle, length 3 in $12.00

TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.

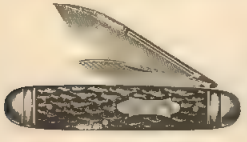
Two blades, one large spear and one pen. Brass lined. Polished steel cap and bolster

Per dozen
No. 9770—Stag handle; length 3¾ in. $12.00
One-half dozen in a box.



Two blades, one large spear and one pen. Half crocus polish. Brass lined. Polished steel cap and bolster.

Per dozen
No. 9273—Stag handle; length 3⅝ in. $9 00
One-half dozen in a box.



Two blades, one large spear and one pen. Brass lined. Polished steel grooved cap and bolster.

Per dozen
No. 9879—Stag handle; length 3¾ in. $12.00
One-half dozen in a box.

Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

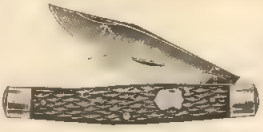
Per dozen
No. 9023—Stag handle; length 3 in. $12.00
One-half dozen in a box

Two blades, one large spear and one pen. Half crocus polished. Brass lining Polished steel cap and bolster.

Per dozen
No. 9821—Stag handle; length 3¾ in. $15.00
One-half dozen in a box.

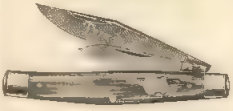
Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9675—Stag handle; length 3 in. $12.00
One-half dozen in a box.



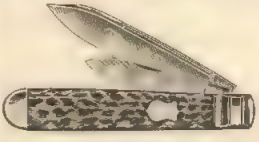
Two blades, one large clip and one pen. Half crocus polished. Brass lining Nickel silver cap and bolster.

Per dozen
No. 9348—Stag handle, length 3¾ in $12.00
One half dozen in a box.



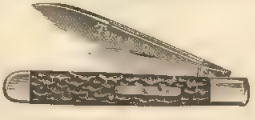
Two blades, one large clip and one pen. Half crocus polished. Brass lining. Nickel silver cap and bolster.

Per dozen
No. 9348N.H.—New horn handles; length 3¾ in. $12 00
One-half dozen in a box



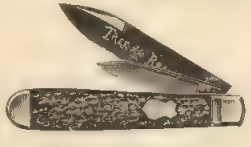
Two blades, one large spear and one pen. Half polished Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9815—Stag handle, length 4¼ in. $18.00
One half dozen in a box



Two blades, one large spear and one pen. Brass lined Nickel silver bolsters.

Per dozen
No. 9083—Stag handle; length 3¾ in. $15 00
One-half dozen in a box



Two blades, one large spear and one pen. Half polished Brass lined Nickel silver cap and bolster

Per dozen
No. 9325 Stag handle; length 3½ in. $12.00
One-half dozen in a box.

Two blades, one large spear and one pen. Half crocus polished. Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9463—Stag handle; length 3¼ in. $15.00
No. 9463N.H.—New horn handle; length 3¼ in. 15.00
One-half dozen in a box.

TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.

Stork Knife

Three blades, one long spear, one pen and one nail file. Milled full crocus polished Brass lined.

Per dozen

No. 6275—Fancy aluminum handle; length 3¾ in. ...$24.00
One-half dozen in a box

Two blades, one large spear and one pen. Full crocus polished. With shackle. Flat handle.

Per dozen

No. 7545—Nickel silver handle; length 3½ in. $18.00
One-half dozen in a box.

Two blades, one large spear and one pen Full crocus polished. Nickel silver lined. Milled. Nickel silver shackle.

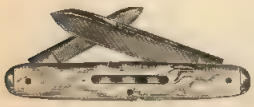
Per dozen

No. 7514—Pearl handle; length 2½ in. $36.00
One-half dozen in a box

Two blades, one large spear and one pen. Brass lined Nickel silver tips and shackle.

Per dozen

No. T.B.3504—Pearl handle; length 3 in. $30.00
One-half dozen in a box.



Two blades, one long spear and one pen. Brass lined Nickel silver tips.

Per dozen

No. T.B.2284—Pearl handle; length 3 in $24.00
One-half dozen in a box

Four blades, one spear, two pens and one nail file. Brass lined. Nickel silver tips.

Per dozen

No. T.B.2294—Pearl handle; length 3 in. $30.00
One-half dozen in a box

Two blades, one large spear and one pen. Full crocus polished Brass lined.

Per dozen

No. 7256—Japanese pearl handle; length 3¾ in. $36.00
One-half dozen in a box.

Two blades, one long spear and one pen. Brass lined. Nickel silver tips

Per dozen

No. T.B.2269—Pearl handle; length 3 in. $18.00
One-half dozen in a box

Two blades, one large sheepfoot and one pen. Brass lined Nickel silver cap and bolster.

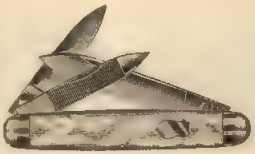
Per dozen

No. 7267—Pearl handle; length 2¾ in. $18.00
One-half dozen in a box.

Two blades, one long spear and one pen Full crocus polished. Brass lined. Nickel silver tips.

Per dozen

No. 5454—Pearl handle; length 2½ in. $30.00
One-half dozen in a box



Three blades, one long spear, one pen and one nail file Brass lined. Nickel silver cap and bolster.

Per dozen

No. T.B.3494—Pearl handle; length 3 in. $30.00
One-half dozen in a box.

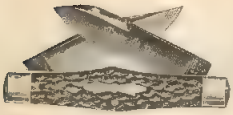
Two blades, one large clip and one pen. Brass lined Nickel silver cap and bolster.

Per dozen

No. 9992—Pearl handle; length 3 in. $24.00
One-half dozen in a box.

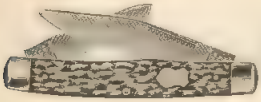
TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.



Two blades, one long clip and one large spear. Brass lined. Polished steel bolsters.

No. 9833—Stag handle; length 4 in. . . . . Per dozen .$15.00
One-half dozen in a box

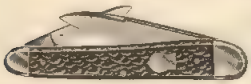


Two blades, one long clip and one budding. Half crocus polished. Brass lined. Polished steel bolsters.

No. 9344—Stag handle; length 4 in. Per dozen $15.00
One half dozen in a box

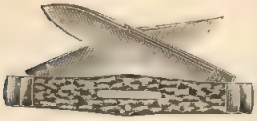
Two blades, one long clip and one pen. Brass lined. Nickel silver cap and bolster.

No. A1143—Stag handle; length 3¼ in. Per dozen $15.00
One-half dozen in a box



Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster

No. A7090—Stag handle; length 3 in. Per dozen $15.00
One-half dozen in a box.

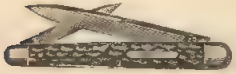


Two blades, one large spear and one long clip. Brass lined. Nickel silver bolsters

No. 9733—Stag handle; length 4 in. Per dozen $15.00
One half dozen in a box.

Two blades, one large spear and one pen. Brass lined. Nickel silver bolster

No. 9153—Stag handle; length 3¾ in. Per dozen $9.00
One-half dozen in a box.

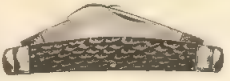


Two blades, one long spear and one pen. Half crocus polished Brass lined. Nickel silver bolsters.

No. 9038—Stag handle; length 3½ in. Per dozen $15.00
One-half dozen in a box.

Two blades, one large sheepfoot and one pen. Brass lined. Polished steel cap and bolster.

No. A6042—Stag handle; length 3⅞ in. Per dozen $12.00
One-half dozen in a box



Two blades, one large sheepfoot and one pen Brass lined. Polished steel cap and bolster

No. A6098—Stag handle; length 3½ in. Per dozen $12.00
One half dozen in a box

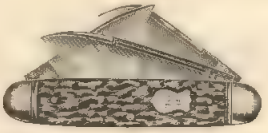
Two blades, one long spear and one nail file Brass lined Nickel silver cap and bolster

No. A3803I—Iridescent handle; length 3 in. Per dozen $15.00
One-half dozen in a box.

Imported

Three blades, one long spear, one pen and one nail file. Blue glazed finished Brass lined. Polished steel bolsters.

No. 5880—Stag handle; length 4 in. Per dozen $24.00
One-half dozen in a box

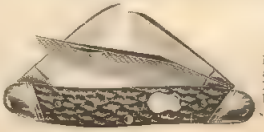


Three blades, one large spear, one sheepfoot and one pen. Half polished. Brass lined. Nickel silver bolsters.

No. 9847—Stag handle; length 4 in. Per dozen $18.00
One-half dozen in a box

Three blades, one long clip, one sheepfoot and one budding. Brass lined. Nickel silver cap and bolster.

No. 9068—Stag handle; length 4 in. Per dozen $18.00
One-half dozen in a box

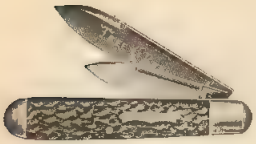


Three blades, one large clip, one budding and one pen. Brass lined. Polished steel bolsters

No. 9113—Stag handle; length 3½ in. Per dozen $18.00
One-half dozen in a box.

TREE BRAND POCKET KNIVES

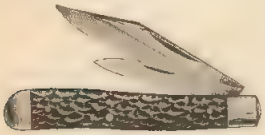
Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed



Two blades, one large spear and one pen. Brass lined. Polished steel cap and bolster.

Per dozen

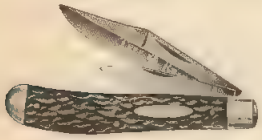
No. 9078—Stag handle; length 4½ in. $18.00
One-half dozen in a box.



Two blades, one large clip and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

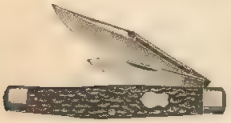
No. 9908—Stag handle; length 2¾ in. $12.00
One-half dozen in a box



Two blades, one large clip and one pen. Brass lined. Polished steel cap and bolster.

Per dozen

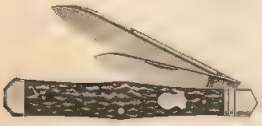
No. 9615—Stag handle; length 3¾ in. $15 00
One-half dozen in a box.



Two blades, one large clip and one pen Half crocus polished Brass lined. Nickel silver cap and bolster

Per dozen

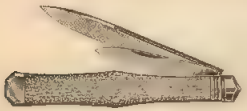
No. 9368—Stag handle; length 4 in. $15 00
One-half dozen in a box



Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

No. 9816 Stag handle; length 3½ in. $15.00
One-half dozen in a box



Two blades, one large spear and one pen. Brass lined Nickel silver cap and bolster.

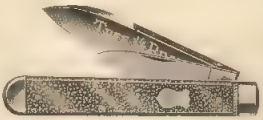
Per dozen

No. 9816A.T.—Tinsel handle; length 3½ in. $15.00
One-half dozen in a box.

Two blades, one large spear and one pen. Half crocus polished Brass lined. Nickel silver cap and bolster

Per dozen

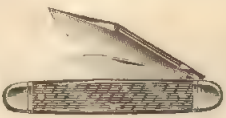
No. 9043A.T. -Tinsel handle; length 3 in. $15.00
One half dozen in a box.



Two blades, one large spear and one pen. Half crocus polished. Brass lined. Polished steel cap and bolster.

Per dozen

No. 9624A.T. Tinsel handle; length 4⅛ in. $18.00
One-half dozen in a box.



Two blades, one large clip and one pen. Half crocus polished. Brass lined Nickel silver bolsters

Per dozen

No. 9982I.—Iridescent handle, length 3 in. $12.00
One-half dozen in a box.

Two pen blades. Brass lined Nickel silver bolsters

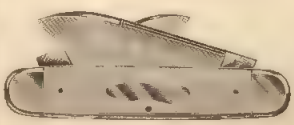
Per dozen

No. 9151—Black celluloid handle; length 3⅝ in. $9.00
One-half dozen in a box

Two blades, one large spear and one pen Brass lined. Nickel silver cap and bolster.

Per dozen

No. 9984 Stag handle; length 4 in. $18.00
One half dozen in a box



Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

No. 9084W—White handle; length 4 in. $18.00
One-half dozen in a box.

TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.

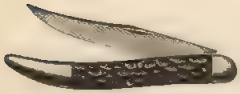
Imported

One large spear blade; blue glazed finish

Per dozen

No. 6820—Brown pressed steel handle; length 3⅛ in...$3.00

One-half dozen in a box

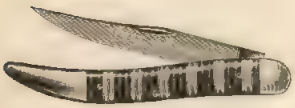


One long clip blade, glazed finish. Polished steel bolster. Brass lined.

Per dozen

No. 9488—Stag handle; length 4¾ in. $12.00

One-half dozen in a box.



One large clip blade; glazed finish; polished steel bolster. Brass lined.

Per dozen

No. 9488PYR—Pyralin handle; length 4¾ in. $12.00

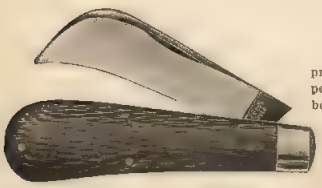
One half dozen in a box

One long clip blade; half crocus polished. Polished steel bolster and cap. Brass lined.

Per dozen

No. 9418—Stag handle; length 3⅞ in. $12.00
No. 9418PYR—Pyralin handle; length 3⅞ in. 12.00

One-half dozen in a box.

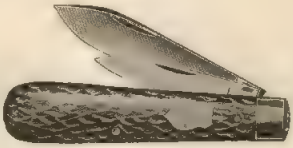


One large pruning blade; polished steel bolster.

Per dozen

No. 9215—Rosewood handle; length 4 in. $12.00

One-half dozen in a box.

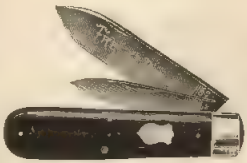


Two blades, one large spear and one pen. Blue glazed finish. Brass lining. Polished steel bolster.

Per dozen

No. 9263—Stag handle; length 3¼ in. $6.00
No. 9263C—Stag handle with clip blade, otherwise same as No. 9263 ..... 6.00

One-half dozen in a box.

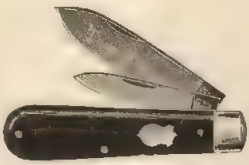


Two blades, one large spear and one pen. Blue glazed finish. Brass lining. Polished steel bolster.

Per dozen

No. 9261—Black handle; length 3¼ in. $6.00

One-half dozen in a box.

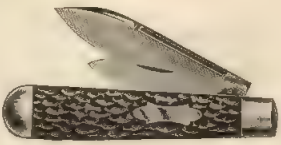


Two blades, one large spear and one pen. Blue glazed finish. Brass lining. Polished steel bolster.

Per dozen

No. 9260—Rosewood handle; length 3¼ in. $6.00

One-half dozen in a box

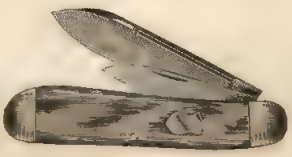


Two blades, one large spear and one pen. Half crocus polished. Brass lined. Polished steel cap and bolster.

Per dozen

No. 9741 Stag handle; length 3¾ in. $12.00

One-half dozen in a box



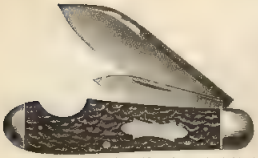
Two blades, one large spear and one pen Brass lined. Polished steel cap and bolster.

Per dozen

No. 9699N.H.—New horn handle; length 3 in. $12.00

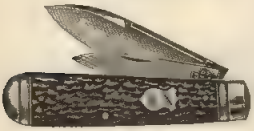
TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.



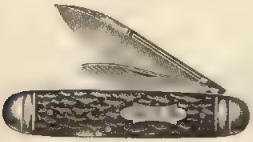
Two blades, one large spear and one pen. Brass lined. Polished steel cap and bolster.

Per dozen
No. 9770—Stag handle; length 3¾ in. $12.00
One-half dozen in a box



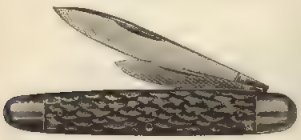
Two blades, one large spear and one pen. Half crocus polish. Brass lined Polished steel cap and bolster.

Per dozen
No. 9278—Stag handle; length 3⅝ in. $9.00
One-half dozen in a box



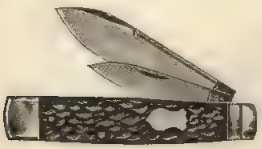
Two blades, one large spear and one pen. Brass lined. Polished steel grooved cap and bolster.

Per dozen
No. 9879—Stag handle; length 3¾ in. $12.00
One-half dozen in a box.



Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9023—Stag handle; length 3 in. $12.00
One half dozen in a box.

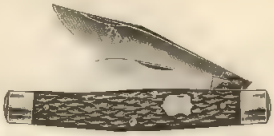


Two blades, one large spear and one pen. Half crocus polished. Brass lining. Polished steel cap and bolster.

Per dozen
No. 9821 Stag handle; length 3⅝ in. $15.00
One-half dozen in a box.

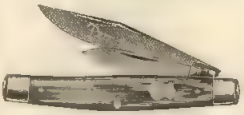
Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9675—Stag handle; length 3 in. $12.00
One-half dozen in a box.



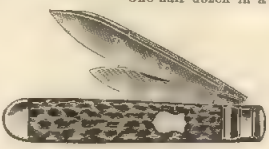
Two blades, one large clip and one pen. Half crocus polished. Brass lining. Nickel silver cap and bolster.

Per dozen
No. 9848 Stag handle; length 3¾ in. $12.00
One-half dozen in a box.



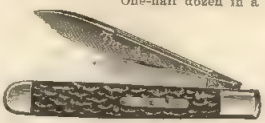
Two blades, one large clip and one pen. Half crocus polished. Brass lining. Nickel silver cap and bolster.

Per dozen
No. 9348N.H.—New horn handles; length 3¾ in. $12.00
One-half dozen in a box.



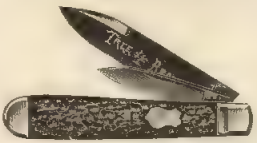
Two blades, one large spear and one pen. Half polished Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9815—Stag handle; length 4¼ in. $18.00
One-half dozen in a box



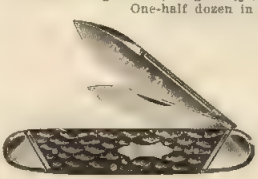
Two blades, one large spear and one pen. Brass lined. Nickel silver bolsters

Per dozen
No. 9033—Stag handle; length 3¾ in. $15.00
One-half dozen in a box.



Two blades, one large spear and one pen. Half polished Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9325—Stag handle; length 3½ in. $12.00
One-half dozen in a box.

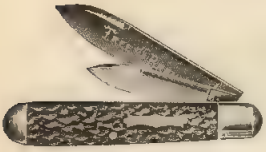


Two blades, one large spear and one pen. Half crocus polished. Brass lined. Nickel silver cap and bolster.

Per dozen
No. 9463—Stag handle; length 3¼ in. $15.00
No. 9463N.H.—New horn handle; length 3¼ in. 15.00
One-half dozen in a box.

TREE BRAND POCKET KNIVES

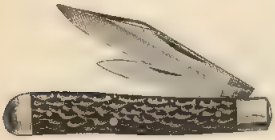
Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.



Two blades, one large spear and one pen. Brass lined. Polished steel cap and bolster.

Per dozen

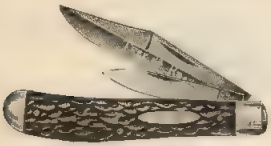
No. 9078—Stag handle length 4½ in $18.00
One half dozen in a box.



Two blades, one large clip and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

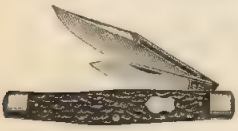
No. 9908 Stag handle; length 2¾ in. $12.00
One-half dozen in a box.



Two blades, one large clip and one pen Brass lined Polished steel cap and bolster

Per dozen

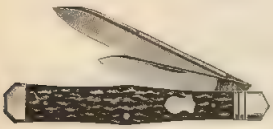
No. 9615—Stag handle; length 3¾ in. $15.00
One-half dozen in a box



Two blades, one large clip and one pen Half crocus polished Brass lined. Nickel silver cap and bolster.

Per dozen

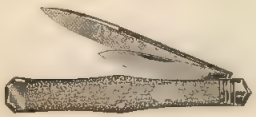
No. 9368—Stag handle; length 4 in. $15 00
One-half dozen in a box.



Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster

Per dozen

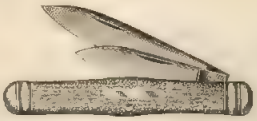
No. 9810—Stag handle; length 3½ in. $15.00
One-half dozen in a box



Two blades, one large spear and one pen. Brass lined Nickel silver cap and bolster.

Per dozen

No. 9816A.T. Tinsel handle; length 3½ in. $15.00
One-half dozen in a box.



Two blades, one large spear and one pen. Half crocus polished. Brass lined. Nickel silver cap and bolster.

Per dozen

No. 9043A.T.—Tinsel handle; length 3 in. $15.00
One-half dozen in a box.

Two blades, one large spear and one pen. Half crocus polished Brass lined. Polished steel cap and bolster.

Per dozen

No. 9624A.T.—Tinsel handle; length 4⅛ in. $18 00
One-half dozen in a box.

Two blades, one large clip and one pen Half crocus polished. Brass lined Nickel silver bolsters.

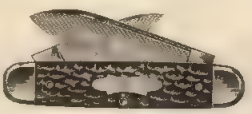
Per dozen

No. 9982L—Iridescent handle; length 3 in. $12.00
One half dozen in a box

Two pen blades. Brass lined. Nickel silver bolsters.

Per dozen

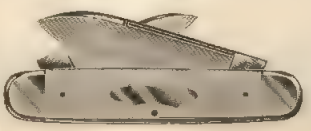
No. 9151—Black celluloid handle; length 3⅜ in. $9.00
One-half dozen in a box.



Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

No. 9984—Stag handle length 4 in $18.00
One-half dozen in a box



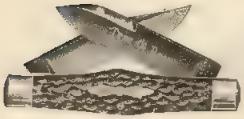
Two blades, one large spear and one pen. Brass lined Nickel silver cap and bolster.

Per dozen

No. 9084W—White handle; length 4 in. $18.00
One-half dozen in a box.

TREE BRAND POCKET KNIVES

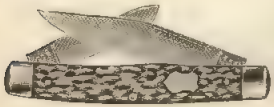
Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.



Two blades, one long clip and one large spear. Brass lined. Polished steel bolsters.

Per dozen

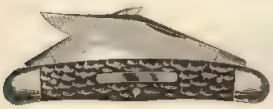
No. 9833 -Stag handle; length 4 in. $15.00
One-half dozen in a box



Two blades, one long clip and one budding Half crocus polished. Brass lined. Polished steel bolsters.

Per dozen

No. 9844—Stag handle; length 4 in. $15.00
One-half dozen in a box.



Two blades, one long clip and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

No. A4148—Stag handle; length 3¼ in. $15.00
One-half dozen in a box.

Two blades, one large spear and one pen. Brass lined. Nickel silver cap and bolster

Per dozen

No. A7090—Stag handle; length 3 in. $15.00
One-half dozen in a box

Two blades, one large spear and one long clip. Brass lined Nickel silver bolsters

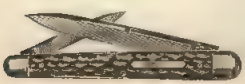
Per dozen

No. 9733 -Stag handle; length 4 in. $15.00
One-half dozen in a box.

Two blades, one large spear and one pen. Brass lined. Nickel silver bolster.

Per dozen

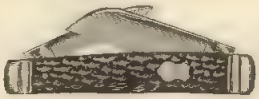
No. 9153—Stag handle; length 3⅝ in. $9.00
One-half dozen in a box.



Two blades, one long spear and one pen Half crocus polished. Brass lined. Nickel silver bolsters.

Per dozen

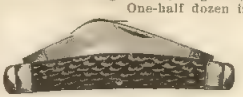
No. 9038—Stag handle; length 3½ in. $15.00
One-half dozen in a box.



Two blades, one large sheepfoot and one pen. Brass lined. Polished steel cap and bolster

Per dozen

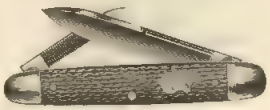
No. A6042—Stag handle, length 3⅞ in. $12.00
One-half dozen in a box



Two blades, one large sheepfoot and one pen Brass lined. Polished steel cap and bolster.

Per dozen

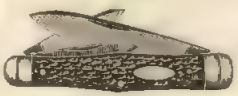
No. A6098—Stag handle; length 3½ in. $12.00
One-half dozen in a box.



Two blades, one long spear and one nail file. Brass lined Nickel silver cap and bolster.

Per dozen

No. A38031—Iridescent handle; length 3 in. $15.00
One-half dozen in a box

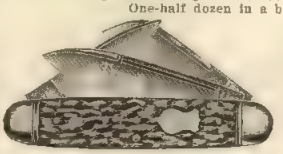


Imported

Three blades, one long spear, one pen and one nail file. Blue glazed finished. Brass lined. Polished steel bolsters.

Per dozen

No. 5880—Stag handle; length 4 in. $24.00
One-half dozen in a box.



Three blades, one large spear, one sheepfoot and one pen. Half polished. Brass lined. Nickel silver bolsters.

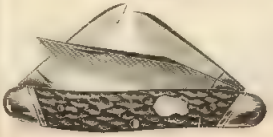
Per dozen

No. 9847—Stag handle; length 4 in. $18.00
One-half dozen in a box

Three blades, one long clip, one sheepfoot and one budding. Brass lined. Nickel silver cap and bolster.

Per dozen

No. 9068—Stag handle; length 4 in. $18 00
One-half dozen in a box.



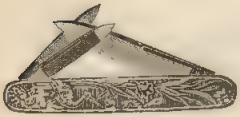
Three blades, one large clip, one budding and one pen. Brass lined. Polished steel bolsters

Per dozen

No. 9113 Stag handle; length 3½ in. $18.00
One-half dozen in a box.

TREE BRAND POCKET KNIVES

Finest quality cutlery steel, hand forged, hardened and uniformly tempered, sharpened and honed.

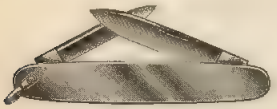


Stork Knife

Three blades, one long spear, one pen and one nail file. Milled full crocus polished. Brass lined.

Per dozen

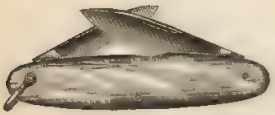
No. 6275—Fancy aluminum handle; length 3⅝ in. ...$24.00
One-half dozen in a box



Two blades, one large spear and one pen. Full crocus polished. With shackle. Flat handle.

Per dozen

No. 7545—Nickel silver handle; length 3½ in. $18.00
One-half dozen in a box.



Two blades, one large spear and one pen. Full crocus polished. Nickel silver lined. Milled. Nickel silver shackle.

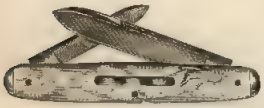
Per dozen

No. 7514 -Pearl handle; length 2½ in. $36.00
One-half dozen in a box.

Two blades, one large spear and one pen. Brass lined. Nickel silver tips and shackle.

Per dozen

No. T.B.3504—Pearl handle; length 3 in. $30.00
One-half dozen in a box.



Two blades, one long spear and one pen. Brass lined Nickel silver tips.

Per dozen

No. T.B.2284 Pearl handle; length 3 in. $24.00
One-half dozen in a box.

Four blades, one spear, two pens and one nail file. Brass lined. Nickel silver tips.

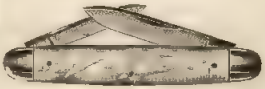
Per dozen

No. T.B.2294—Pearl handle; length 3 in. $30.00
One-half dozen in a box.

Two blades, one large spear and one pen. Full crocus polished Brass lined.

Per dozen

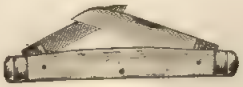
No. 7256—Japanese pearl handle; length 3¾ in $36.00
One-half dozen in a box.



Two blades, one long spear and one pen. Brass lined. Nickel silver tips.

Per dozen

No. T.B.2269—Pearl handle; length 3 in. $18.00
One-half dozen in a box.



Two blades, one large sheepfoot and one pen. Brass lined Nickel silver cap and bolster.

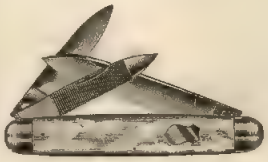
Per dozen

No. 7267—Pearl handle; length 2¾ in. $18.00
One-half dozen in a box.

Two blades, one long spear and one pen. Full crocus polished. Brass lined. Nickel silver tips.

Per dozen

No. 5454—Pearl handle; length 2½ in. $30.00
One-half dozen in a box.



Three blades, one long spear, one pen and one nail file Brass lined. Nickel silver cap and bolster.

Per dozen

No. T.B.3494—Pearl handle; length 3 in. $30.00
One-half dozen in a box.

Two blades, one large clip and one pen. Brass lined. Nickel silver cap and bolster.

Per dozen

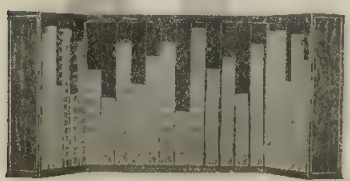
No. 0992—Pearl handle; length 3 in. $24.00
One-half dozen in a box.

CHAMPION SPARK PLUGS
MERCHANDISER ASSORTMENTS

Front View

This case with the car index Chart attached, enables any clerk to select instantly the proper size and type of spark plug that is requested for any passenger car, commercial car, tractor, motor cycle, motor boat and farm and stationary engines. This Merchandiser is adapted for use on your counter, show case or shelf; and it occupies but little space compared to the complete assortment that it carries. It is finely finished, and is an ornament to any store or counter—made of metal, and each compartment will hold an original package of spark plugs. By lifting protecting cover, it takes but a moment to take a record of your sales or stock on hand. Conveniently arranged for quick sales, and will increase your Champion Spark Plug business. Size 31 inches long, 15 inches high and 11 inches deep.

This Champion Merchandiser will be delivered to you with a full assortment of 100 Champion Spark Plugs and 50 Cores representing the leading types that are in constant demand.



Rear View, Open

Assortment A

(For Accessory Dealers, Tractor, Electrical Dealers, Hardware Stores and those carrying a general line.)

Champion Spark Plugs		Cores.	
10—⅛-inch	A-13	10	A-104
30—⅛-inch X	A-15	20	A-105
10—⅛-inch Long X	A-25	10	A-205
10—⅞-inch Standard	A-44	10	A-503
10—⅞-inch Long Std.	A-53	50 Total	
10—⅞-in. L. Regular	AA-53		
10—⅞-inch Heavy	B-43		
10—⅞-inch Regular	JAS-43		
100 Total			

Rear View. Closed.

Assortment B.

(For Ford and Fordson Tractor Agent.)

Quantity	Plugs	Quantity	Cores
70—⅛-inch X	A-15	80	A-105
30—⅛-inch Long X	A-25	20	A-205

Assortment C.

When dealers are agents for two or more cars, the order for 100 Champion Spark Plugs and 50 Cores may be assorted according to their sales of each make of car.

Order must specify one of the above assortments to secure the merchandiser.

CHAMPIOM SPARK PLUGS

Nos. H-14 and H-44.

No.	Each
H-14, ½ Inch Thread	$1.00
H-44, ⅞ Inch Thread	1.00

Petticoat Insulator
16-16 Inch Hex.
Two Piece

Nos. J-13 to J-53.

No.	Each
J-13, ½ Inch Thread	$0.75
J-23, ½ Inch Thread Long 16-16 Inch Hex.	.75
J-43, ⅞ Inch Thread	.75
J-53, ⅞ Inch Thread Long ⅞ Inch Hex.	.75

Short Ball and Short Post Terminal Included with J-53
Conical Insulator
One Piece

No. JA-43.

No.	Each
JA-43, ⅞ Inch Thread	$0.75

Conical Insulator
1⅛ Inch Hex.
One Piece

Nos. JAS-43 and JA-53.

No.	Each
JAS-43, ⅞ Inch Thread.	$0.75
JA-53, ⅞ In. Thread Long	.75

Conical Insulator
1⅛ Inch Hex.
One Piece

No. J-63.

No.	Each
J-63, Metric Thread	$0.75

Conical Insulator
1 Inch Hex.
One Piece

CHAMPION INSULATORS

Gaskets furnished with all Insulators

A-103
Conical

A-104
Petticoat

A-105

B-103
Conical

Insulators	Plug Type	Each
A-103	A-13, A-43, A63	$0.40
A-104	A-14, A-44, A-64	.40
A-104-O	A-14-O	.40
A-105	A-15	.30
A-205	A-25, AB-44	.40
A-304	A-34	.40
A-503	A-53, AA-53	.40
B-103	B-13, B-43, B-53, B-73	.45
B-803	B-53	.45
H-104	H-14, H-44, H-64	.40

Symbols ending with 3 are Conical Insulators.
Symbols ending with 4 are Petticoat Insulators

One in a box, twenty-five in a carton

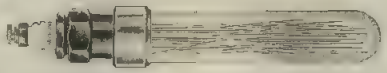
CHAMPION GASKETS

Patented copper, asbestos lined, gaskets —an exclusive feature of all Champion Spark Plugs.
Price Each $0.06.

For the proper type of Spark Plug for every type of engine, refer to Index Chart.

SPARK PLUG CLEANERS

Champion Minute.



Champion minute spark plug cleaner enables the amateur as well as the expert mechanic to thoroughly clean the spark plug without the necessity of taking it apart or using tools of any kind.

It is a sure and easy way to cure automobile or gas engine difficulties arising from plugs that need cleaning.

This simple device consists of a special glass vial about 5 inches long, containing about 50 specially adapted steel needles with a bushing in the open end into which the spark plug is screwed. To clean a plug, fill the vial half full of gasoline, screw the spark plug into the bushing and shake vigorously for a minute or two. The needles quickly pick the carbon from the porcelain and the gasoline dissolves the oil deposits, leaving, in a few minutes, a clean plug.

Champion—Weight, per package of ten, 4¾ pounds.
Each $0.60

Ten in a package.

JANNEY, SEMPLE, HILL & CO.

CHAMPION SPARK PLUGS

FARM, STATIONARY, MARINE AND LIGHTING ENGINE SCHEDULE

Rochester			Schramm	⅞ in.	A-44	Sypher	⅞ in.	A-44
Duesenberg	⅞ in.	JAS-43	Standard			Termaat &		
Ronning	⅞ in	B-43	Separator	½ in.	A-14	Monohan	½ in	B-14
"	⅞ in	A-43	Stanley .. Long	⅞ in.	A-23	Turner & Moore	⅞ in.	JAS-43
"	⅞ in	JAS-43	Stearns	⅞ in.	JB-43	Twin City	⅞ in.	A-44
Root & Vander-			"	⅞ in.	B-43	Unlectric .Long	⅞ in.	A-53
voort	⅞ in.	B-43	Sterling	⅞ in.	JAS-43	Universal	½ in.	A-13
Rutenber	⅞ in.	A-44	Stover	½ in.	A-14	Van Blerck	⅞ in.	JAS-43
Sanderson Ex. L.	½ in	A-34	" .Long	½ in.	A-24	Walker	⅞ in.	A-43
			Supreme	⅞ in.	JA-43	Waterloo Boy L.	½ in.	A-24

Weidely Bulldog	⅞ in.	J-43	
Waukesha	⅞ in.	B-43	
Westman	⅞ in	B-43	
"	½ in.	B-13	
Western	⅞ in	A-43	
Willys-Light	⅞ in	A-43	
Winton Long	⅞ in.	B-53	
Wisconsin	⅞ in.	JB-43	
Witte	⅛ In.	A-13	
Wolverine Ex. L.	½ in.	A-34	

No. A-13.

No.		Each
A-13,	½ Inch Thread	$0.75

Conical Insulator
15-16 Inch Hex.
Two Piece

Nos. A-14 to A-34.

No.		Each
A-14,	½ Inch Thread	$0.75
A-14-O,	½ Inch Thread	.75
A-34,	½ in Thread Ex. L.	.75

Petticoat Insulator
15-16 Inch Hex.
Two Piece

No. A-15.

No.		Each
A-15,	½ Inch Thread	$0.60

For Ford Cars
Petticoat Insulator
15-16 Inch Hex.
Two Piece

No. A-25.

No.		Each
A-25,	½ Inch Thread	$0.60

For Fordson Tractors
Petticoat Insulator
15-16 Inch Hex
Two Piece

Nos. A-43 to A-64.

No.		Each
A-43,	⅞ Inch Thread	$0.75
A-63,	Metric Thread	.75

Conical Insulator

A-44,	⅞ Inch Thread	.75
A-64,	Metric Thread	.75

Petticoat Insulator
15-16 Inch Hex.
Two Piece

No. A-53.

No.		Each
A-53,	⅞ Inch Thread L.	$0.75

Conical Insulator
15-16 Inch Hex.
Two Piece

No. AA-53.

No.		Each
AA-53,	⅞ In. Thread L.	$0.75

Conical Insulator
1⅛ Inch Hex.
Two Piece

Nos. B-13 to B-53.

No.		Each
B-13,	½ Inch Thread	$0.75
B-43,	⅞ Inch Thread	.75
B-53,	⅞ Inch Thread L.	.75
B-73,	⅞ Inch Thread	.75
B 83,	⅞ Inch Thread L.	.75

Conical Insulator
1⅛ Inch Hex.
Two Piece

All above, one in a box, twelve in a carton.

A Champion-Dependable-For Every Engine

PASSENGER CARS

-Ace.....⅜ Standard 1
-Allen.....⅜ Standard 1
Ambassador-⅜ Lg. Bdy. Reg. 4
American.....⅜ Standard 1
Anderson.....⅜ Lg. Bdy. Reg. 4
Apperson 4 & 6
" 8.....⅜ Lg. Bdy. Reg. 4
-Auburn.....⅜ Standard 1
Austin.....⅜ Standard 1
-Australian Six.⅜ Standard 1
-Begg.....⅜ Lg. Bdy. Reg. 4
-Bell.....⅜ Standard 1
-Biddle.....⅜ Standard 1
Bour Davis...⅜ Lg. Bdy. Reg. 4
Brewster.....⅜ Standard 1
Buick.....⅜ Long, Regular 5
Cadillac.....⅜ Lg. Bdy. Reg. 4
Cameron.....⅜ Lg. Bdy. Reg. 4
Case.....⅜ Long, Regular 5
Chalmers-⅜ Lg. Body Reg. 4
Chandler.....⅜ Lg. Body Reg. 4
Chevrolet-⅜ Long, Regular 5
Cleveland...⅜ Lg. Bdy. Reg. 4
-Climber.....⅜ Standard 1
Cole.....⅜ Lg. Bdy. Reg. 4
-Columbia.....⅜ Long Standard 1
Comet.....⅜ Standard 1
Commonwealth.....⅜ Standard 1
Crane Simplex
.....⅜ Long Body Reg. 4
Crawford-⅜ Lg. Body Reg. 4
-Crow-Elkhart.....⅜ Standard 1
-Cunningham.....⅜ Regular 5
Daniels.....⅜ Lg. Body Reg. 4
Davis.....⅜ Long Body Reg. 4
Dixie.....⅜ Standard 1
Dodge.....⅜ Regular 5
-Durria.....⅜ Lg. Body Reg. 4
Dort 4 & 6.....⅜ Standard 1
-Douglas.....⅜ Lg. Body Reg. 4
Driggs.....⅜ Standard 2
Duesenberg.....Metric A-43
Dupont.....⅜ Long Body Reg. 4
Durant 4.....⅜ Long Reg. 5
" 6.....⅜ Standard 1
-Earl.....⅜ Long Body Reg. 4
-Economy.....⅜ Standard 1
-Elcar.....⅜ Standard 1
-Elgin.....⅜ Standard 1
-Essex.....Metric A-44
Fageol...⅜ Lg. Body Reg. 4
-Ferris Six.⅜ Lg. Bdy. Reg. 4
-Fiat.....Lg. Body Reg. 4
-Ford.....⅝ Inch K
-Franklin...⅜ Long Standard 1
-Gardner.....⅜ Standard 1
Globe.....⅜ Lg. Body Reg. 4
-Grant.....⅜ Standard 1
-Gray.....⅜ Long Standard 1
-H. C. S.....⅜ Standard 1
-Handley-Knight
.....⅜ Long Body Reg. 4
Hanson.....⅜ Standard 1
Hatfield...⅜ Long Body Reg. 4
Haynes (to '22)...⅜ Standard 2
" (Mod. 75).⅜ Lg. Reg. 5
Holmes.....⅜ Standard 2
Hudson (to '21)
.....⅜ Long Body Reg. 4
" (from '21) Metric A-44
-Huffman.⅜ Lg. Bdy. Reg. 4
Hupmobile-⅜ Lg. Bdy. Reg. 4
Jackson.....⅜ Lg. Bdy. Reg. 4
Jewett.....⅜ Long Body Reg. 4
Jones 6.....⅜ Standard 1
-Jordan.....⅜ Long Body Reg. 4
Kenworthy.⅜ Lg. Body Reg. 4
-Keasler.....⅜ Long Standard 1
-King.....⅜ Long Body Reg. 4
Kissel.....⅜ Long Body Reg. 4
-Kline Car.....⅜ Lg. Bdy. Reg. 4
Lafayette.....⅜ Lg. Body Reg. 4
Lexington.....⅜ Long Body Reg. 4
-Lexington.....⅜ Standard 1
Liberty-⅜ Lg. Bdy. Reg. 4
-Lincoln.....⅜ Lg. Body Reg. 4
-Locomobile.....⅜ Standard 1
Mailohm.....⅜ Standard 1
Marmon (to '21) ⅜ S. A. E. J-43
" (from '21) ⅜ L. Bdy. Reg. 4
Maxwell.....⅜ Standard 1
-McFarlan 6 (to '21)
.....⅜ Lg. Body Reg. 4
" (from '21) ⅜ L. Std. 2
-Mercer 4.....⅜ Long Standard 1
" 6.....⅜ Standard 1
-Merit.....⅜ Lg. Body Reg. 4
-Meteor.....⅜ Lg. Body Reg. 4
-Metz (to '21) ½ In. Ex. Lg. A-34
" (from '21)-⅜ Stand. 1
Mitchell.....⅜ Regular 5
Moline Knight
.....⅜ Long Body Reg. 4
-Monitor.....⅜ Standard 1
Monroe.....⅜ Standard 1
-Moon.....⅜ Lg. Bdy. Reg. 4
Moore.....⅜ Standard 2
Murray.....⅜ Standard 1
Nash.....⅜ Long S. A. E. J-53
National (to '21)
.....⅜ Long Body Reg. 4
" (from '21) ⅜ Lg. Std. 6
Nelson.....Metric A-63
Nonpareil.....⅜ Lg. Body Reg. 4
Norwalk.....⅜ Standard 2
Oakland.....⅜ Lg. Std. 6
Ogren.....Long Standard 1
Oldsmobile 4.....⅜ Lg. Std. 6
" 6.....⅜ Standard 1
" 8.....⅜ Lg. Bdy. Reg. 4
Overland 90.....½ Inch A-14
" 6 cyl.....⅜ Standard 1
" 4 and all others
.....⅜ Inch Long 7
-Owen Magnetic
.....⅜ Long Body Reg. 4
Packard.....⅜ Lg. Body Reg. 4
Paige.....⅜ Lg. Body Reg. 4
Patterson-⅜ Lg. Body Reg. 4
-Peerless.....⅜ Lg. Body Reg. 4
-Piedmont.....⅜ Standard 1
-Pierce Arrow.⅜ L. Bdy. Reg. 4
-Pilot.....⅜ Long Body Reg. 4
-Premier.....⅜ Standard 2
-Premocar...⅜ Lg. Body Reg. 4
Pullman.....⅜ Standard 1
-Ranger.....⅜ Lg. Body Reg. 4
Regal.....⅜ Inch A-14
-Reo.....⅜ Inch Long 7
Re Vere.....⅜ Lg. Body Reg. 4
-Rickenbacher-⅜ Lg. Stand. 6
-Roamer.....⅜ Lg. Body Reg. 4
-R & V. Knight
.....⅜ Lg. Body Reg. 4
-Rolls Royce.....Metric A-64
Saxon (to '21).....⅜ Standard 1
(from '21) ..... ⅜ Lg. Std. 6
-Sayers.....⅜ Lg. Body Reg. 4
Scripps-Booth 4.....⅜ Lg. Reg. 5
" " 6.....⅜ Lg. Std. 6
" " 8.....Metric A-42
-Seneca.....⅜ Lg. Body Reg. 4
-Severin.....⅜ Lg. Body Reg. 4
Sheridan.....⅜ Lg. Regular 5
Singer.....⅜ Standard 1
-Skelton.....⅜ Standard 1
Standard 8.....⅜ L. Bdy. Reg. 4
Star.....⅜ Long Regular 5
States.....⅜ Standard 2
-Stearns-Knight.....⅜ Lg. Std. 6
-Stephens.....⅜ Long Reg. 5
Stevens-Duryea
.....⅜ Lg. Bdy. Reg. 4
-Studebaker (to '20)...½ In. A-14
" (from '20) ⅜ Stand. 1
-Stutz.....⅜ S. A. E. J-43
" " .....⅜ Lg. Regular 5
-Supreme.....⅜ Standard 2
-Templar.....⅜ Standard 2
-Tulsa.....⅜ Lg. Bdy. Reg. 4
-Velie 34 & 58.⅜ Lg. Stand. 6
" (48).....⅜ Lg. Bdy. Reg. 4
Westcott.....⅜ Lg. Reg. 5
White.....⅜ Lg. Bdy. Reg. 4
-Wills Ste. Claire...Metric A-43
Wills-Knight.....⅜ Reg. 3
-Winton (to '20).....⅜ Lg. Reg. 5
" (from '20)
.....⅜ Lg. Bdy. Reg. 4
Yellow Cab...⅜ Lg. Bdy. Reg. 4

FARM, STATIONARY, MARINE AND LIGHTING ENGINES

Aerothrust...⅞ Lg. Stand. 6
-Alamo.....⅜ Reg. 3
-Amphion.....⅜ Lg. Reg. 5
-Anderson.....½ Inch A-14
-Appleton.....Metric A-63
-Arrow.....½ Inch A-14
-Auto-Lite.....⅜ Standard 2
-Automatic.....½ Inch A-14
-Baker.....½ Inch A-14
-Beaver.....⅜ Lg. Stand. 6
Bessemer...⅜ Lg. Bdy. Reg. 4
-Brennan.....Metric A-64
-Brevard.....⅜ Standard 2
-Buffalo.....⅜ Lg. Body Reg. 4
" .....½ Inch A-14
" .....½ Inch Long 7
-Burnett-Larsh...½ Inch A-14
-Cady.....½ Inch A-14
-Caille.....½ Inch A-14
" .....⅜ Standard 1
-Casey-Jones.....½ Inch A-14
-Challenge.....½ Inch A-14
-C. H & E.....⅜ Lg. Stand. 6
-Cook.....½ Inch Long 7
Curtis.....Metric A-63
-Cushman.....½ Inch A-14
Daytonlight ⅜ Lg. Bdy. Reg. 4
Delco-Light.....⅜ Stand. 1
-Doman.....⅜ Lg. Bdy. Reg. 4
Domastic.....⅜ Lg. Stand. 6
Duesenberg 4
.....⅜ Lg. Bdy. Reg. 4
-Duro.....½ Inch A-14
Dyneletric.....⅜ Stand. 1
-Economy.....½ Inch A-14
-Elco.....⅜ Lg. Bdy. Reg. 4
-Elgin Cas.....⅜ Stand. 1
-Evinrude.....⅜ Lg. Bdy. Reg. 4
-Fairbanks.⅜ Lg. Bdy. Reg. 4
-Fairbanks Morse...½ Inch A-14
-Fairfield.....½ Inch Long 7
-Fate.....⅜ Lg. Bdy. Reg. 4
-Fay & Bowen
.....⅜ Lg. Bdy. Reg. 4
-Fisherman.....⅜ Lg. Stand. 6
-Foos.....½ Inch A-14
-Friend.....½ Inch Long 7
Frubie.....½ Inch Long 7
-Fuller & Johnson...⅜ Stand. 2
" .....½ Inch A-14
" .....½ Inch Long 7
Fulton.....½ Inch Long 7
-Gade.....½ Inch A-14
Gamco Light...⅜ Lg. Stand. 6
Gibbs.....½ Inch A-14
-Gierloht.....½ Inch A-14
-Gilbert.....½ Inch A-14
Hall Scott.....Metric A-63
-Hawley.⅜ Lg. Bdy. Reg. 4
-H. C. Dodge.⅜ Lg. Stand. 6
-Hess.....½ Inch Ex. Long A-34
-Hettinger.....½ Inch A-14
-Holland.....½ Inch A-14
-Holt.....⅜ Lg. Bdy. Reg. 4
-Ideal.....½ Inch Long 7
J. V. B.....⅜ Stand. 2
Kermath...⅜ Lg. Bdy. Reg. 4
-Kawanee.....½ Inch A-14
-Knox.....⅜ Lg. Bdy. Reg. 4
-Kohan...⅜ Lg. Bdy. Reg. 4
-Kohler.....Metric A-63
-Lake.....⅜ Stand. 1
" .....Metric A-63
Lalley Light-⅜ L. Bdy. Reg. 4
-Langstadt-Meyer
.....⅜ Lg. Bdy. Reg. 4
-Lansing.....⅜ Stand. 2
-Lathrop.....⅜ Stand. 6
-Laurel.....⅜ Stand. 1
" .....½ Inch Long 7
Lawrence.....Metric A-63
-Le Roi...⅜ Lg. Bdy. Reg. 4
-Macheck.....⅜ Lg. Reg. 5
-Matthews-⅜ Lg. Bdy. Reg. 4
Maytag.....½ Inch A-14
Meyer-Jute...⅜ Lg. Bdy. Reg. 4
-Manus.....½ Inch A-14
-Michigan.....½ Inch A-14
-Middletown.....½ Inch A-14
Miller.....½ Inch A-14
" .....⅜ Standard 1
Miller Improved...½ Inch A-14
Model.....⅜ Stand. 2
Modge.....½ Inch Long 7
Murray-Tregurtha Met. A-63
New Way.....½ Inch Long 7
-Niagara.....⅜ Stand. 2
Northlite.....½ Inch A-14
-Northwestern-½ Inch A-14
-Nowa.....½ Inch A-14
Owen.....⅜ Stand. 2
-Peninsular.....⅜ Stand. 2
-Perfection.⅜ Lg. Bdy. Reg. 4
" .....½ Inch A-14
-Phelps.....½ Inch A-14
-Pierson.....½ Inch A-14
Powerlite.⅜ Lg. Bdy. Reg. 4
Red Wing.....⅜ Stand. 1
-Regal.....⅜ Stand. 2
" .....⅜ Long Regular 5
Roco.....⅜ Lg. Bdy. Reg. 4
-Ronning.⅜ Lg. Bdy. Reg. 4
-Sanderson-½ Inch Ex. Lg. A-34
-Schramm.....⅜ Stand. 2
Schwarta.....½ Inch Long 7
-Scripps.....⅜ Stand. 2
Speedway.....½ Inch A-14
" .....⅜ Standard 2
-Standard Separator-½ Inch A-14
-Stanley.....½ Inch Long 7
-Sterling.⅜ Lg. Bdy. Reg. 4
-Stover.....½ Inch A-14
-Superior.....½ Inch Long 7
-Sypher.....⅜ Stand. 1
-Termaat & Monahan
.....½ Inch Priming H-14
-Twin City.....⅜ Stand. 1
-Unelectric.....⅜ Lg. Stand. 6
United.....⅜ Reg. 3
-Universal (to '21) ½ Inch A-14
(from '21) ⅜ Stand. 2
-Waterloo Boy ½ Inch Long 7
" " ⅜ In. Ex. Lg. A-34
Wesco.....⅜ Reg. 3
Western.....⅜ Stand. 2
-Westinghouse.....⅜ Stand. 2
-Westman.⅜ Lg. Bdy. Reg. 4
" .....½ Inch A-14
Willys-Light.....⅜ Stand. 2
-Winton.....⅜ Lg. Reg. 5
-Witte.....½ Inch A-14
-Wolverine-½ Inch Ex. Lg. A-34

MOTORCYCLES

Ace.....Metric A-63
Cleveland.....Metric A-63
-Cyclemotor.....Metric A-63
Excelsior.....Metric A-63
-Harley-Davidson.....⅜ Standard 1
Henderson.....Metric A-63
Indian.....Metric A-63
Johnson Motor Wheel.....Standard 1
-Ner-A-Car.....Metric A-63
-Rolloway.....Metric A-64
-Schickel.....Metric A-63
-Shaw.....½ Inch A13
-Thor.....Metric A-63
-Yankee.....Metric A-63

Champion Equipment

Date, Jan. 1, 1923

A Champion-Dependable-For Every Engine

COMMERCIAL CARS

- Acason....⅛ Lg. Bdy. Reg. 4
- Ace....⅛ Lg. Bdy. Reg. 4
- Acme....⅛ Lg. Bdy. Reg. 4
- Ahrens Fox Fire....⅞ Lg. Bdy. Reg. 4
- Akron....⅛ Lg. Reg. 5
- All American....⅛ Lg. Bdy. Reg. 4
- American....⅛ Stand. 2
- Amer. La France....⅛ Lg. Bdy. Reg. 4
- Apex....⅛ Lg. Bdy. Reg. 4
- Armleder....⅛ Lg. Bdy. Reg. 4
- Atco....⅛ Lg. Bdy. Reg. 4
- Atlas....⅛ Stand. 1
- Atterbury..⅛ Lg. Bdy. Reg. 4
- Autocar....⅛ Standard 2
- Available....⅛ Lg. Bdy. Reg. 4
- Avery....⅛ Stand. 2
- Beggs....⅛ Lg. Bdy. Reg. 4
- Bell....⅛ Lg. Bdy. Reg. 4
- Besserer....⅛ Lg. Bdy. Reg. 4
- Bethlehem (2 ton)....⅛ Stand. 2
  - " (5 ton) ⅛ L. Bdy. Reg. 4
- Betz....¾ Lg. Bdy. Reg. 4
- Bolte....⅛ Lg. Bdy. Reg. 4
- Bridgeport ⅛ Lg. Bdy. Reg. 4
- Brinton....⅛ Lg. Bdy. Reg. 4
- Brockway....⅛ Reg. 3
- Buffalo....⅛ Lg. Bdy. Reg. 4
- Casco....⅛ Stand. 2
- Chicago....⅛ Lg. Bdy. Reg. 4
- Clydesdale ⅛ Lg. Bdy. Reg. 4
- Collier....⅛ Lg. Bdy. Reg. 4
- Columbia ⅛ Lg. Bdy. Reg. 4
- Comet....⅛ Stand. 1
- Commerce....⅛ Stand. 2
- Concord....⅛ Lg. Bdy. Reg. 4
- Cook....⅛ Lg. Bdy. Reg. 4
- Corbitt ⅛ Lg. Bdy. Reg. 4
- Crawford....⅛ Stand. 2
- Cunningham....Regular 6
- Cyclone....⅛ Lg. Stand. 6
- Dart....⅛ Reg. 3
- Day-Elder....⅛ Stand. 1
- Dearborn....⅛ Lg. Bdy. Reg. 4
- Defiance ⅛ Lg. Bdy. Reg. 4
- De Kalb....⅛ Stand. 2
- Denby....⅛ Stand. 2
- Dependable ⅛ Lg. Bdy. Reg. 4
- Detroit....⅛ Stand. 1
- Diamond T ⅛ Lg. Bdy. Reg. 4
- Diehl....⅛ Lg. Bdy. Reg. 4
- Dispatch....⅛ Stand. 1
- Dodge....⅛ Reg. 3
- Dorris....⅛ Reg. 3
- Douglas....⅛ Lg. Bdy. Reg. 4
- Duplex....⅛ Reg. 3
- Duty....⅛ Lg. Stand. 6
- Fageol....⅛ Reg. 3
- Famous....⅛ Stand. 2
- Federal....⅛ Lg. Bdy. Reg. 4
- Ford....⅛ Reg. X
- Forschler....⅛ Lg. Bdy. Reg. 4
- F W D....⅛ Lg. Bdy. Reg. 4
- Fulton....⅛ Lg. Bdy. Reg. 4
- Gabriel....⅛ Lg. Bdy. Reg. 4
- Garford (1 ton)....⅛ Lg. Bdy. Reg. 4
  - " ⅛ Lg. Bdy. Reg. 4
  - " ⅛ Long Regular 5
- Gary....⅛ Lg. Bdy. Reg. 4
- Geisix....⅛ Lg. Bdy. Reg. 4
- Giant....⅛ Lg. Bdy. Reg. 4
- Globe....⅛ Lg. Bdy. Reg. 4
- G M C....⅛ Lg. Bdy. Reg. 4
- Graham....⅛ Lg. Bdy. Reg. 4
- Gramm Bernstein....⅛ Lg. Bdy. Reg. 4
- Grant....⅛ Stand. 2
- Hahn....⅛ Lg. Bdy. Reg. 4
- Hall....⅛ Lg. Bdy. Reg. 4
- Harvey....⅛ Lg. Bdy. Reg. 4
- Hood....⅛ Lg. Reg. 5
- Huffman....⅛ Lg. Bdy. Reg. 4
- Hurlburt....⅛ Lg. Bdy. Reg. 4
- Huron....⅛ Lg. Bdy. Reg. 4
- Independent....⅛ L. Bdy. Reg. 4
- Indiana....⅛ Stand. 2
- Int'l. Harvester....⅛ Standard 2
- Jackson....⅛ Lg. Bdy. Reg. 4
- Jones....⅛ Stand. 2
- Jumbo....⅛ Stand. 2
- Kalamazoo....⅛ Lg. Bdy. Reg. 4
- Kankakee....⅛ Lg. Bdy. Reg. 4
- Kardell....⅛ Stand. 2
- Kearns....⅛ Lg. Bdy. Reg. 4
- Kelden....⅛ Lg. Bdy. Reg. 4
- Kelly-Springfield....⅛ Lg. Bdy. Reg. 4
- Keystone....⅛ Lg. Bdy. Reg. 4
- Kimball....⅛ Lg. Bdy. Reg. 4
- Kissel....⅛ Lg. Bdy. Reg. 4
- Kleiber....⅛ Lg. Bdy. Reg. 4
- Klemm....⅛ Lg. Bdy. Reg. 4
- Koehler....⅛ Lg. Bdy. Reg. 4
- Lamson....⅛ Stand. 1
- Landshaft....⅛ Stand. 1
- Lane....⅛ Stand. 1
- Lange....Long Standard 6
- Larrabee-Deyo....⅛ Lg. Bdy. Reg. 4
- Lippard-Stewart....⅛ Lg. Bdy. Reg. 4
- Little Giant....⅛ Stand. 1
- Luedinghaus....⅛ L. Bdy. Reg. 4
- Luverne....⅛ L. Bdy. Reg. 4
- Mercer....⅛ Stand. 2
- Mack....⅛ L. Bdy. Reg. 4
- Marmon....⅛ L. Bdy. Reg. 4
- Master....⅛ Lg. Bdy. Reg. 4
- Maxim....⅛ Lg. Stand. 6
- Maxwell....⅛ Stand. 2
- Menominee....⅛ Lg. Bdy. Reg. 4
- Meteor....⅛ Stand. 2
- Midland....⅛ Lg. Bdy. Reg. 4
- Miller....⅛ Stand. 2
- Moline....⅛ Inch A-14
- Moreland....⅛ L. Bdy. Reg. 4
- Muskegon....⅛ Stand. 1
- Mutual....⅛ Lg. Bdy. Reg. 4
- Napoleon....⅛ Stand. 2
- Nash....⅛ Lg. Bdy. Reg. 4
- Nelson & Le Moon....⅛ Lg. Body Reg. 4
- Netco....⅛ Lg. Bdy. Reg. 4
- New York....⅛ Stand. 1
- Niles....⅛ Lg. Bdy. Reg. 4
- Noble....⅛ Lg. Bdy. Reg. 4
- Northway....⅛ Lg. Bdy. Reg. 4
- O. K....⅛ Lg. Bdy. Reg. 4
- Old Hickory ⅛ Lg. Bdy. Reg. 4
- Old Reliable ⅛ Lg. Bdy. Reg. 4
- Oldsmobile....⅛ Long Standard 6
- Oneida....⅛ Lg. Bdy. Reg. 4
- Orleans....⅛ L. Bdy. Reg. 4
- Oshkosh....⅛ L. Bdy. Reg. 4
- Packard....⅛ Lg. Bdy. Reg. 4
  - " ⅛ Metric A-83
- Paige....⅛ L. Bdy. Reg. 4
- Parrett....⅛ Stand. 2
- Patriot....⅛ Lg. Bdy. Reg. 4
- Peerless....⅛ Lg. Body Reg. 4
  - " ⅛ Metric A-83
- Piedmont....⅛ Stand. 2
- Pierce-Arrow (R 9) Metric A-83
  - " ⅛ Lg. Bdy. Reg. 4
- Pioneer....⅛ Lg. Bdy. Reg. 4
- Pittsburgher ⅛ L. Bdy. Reg. 4
- Power....⅛ Reg. 3
- Premocar....⅛ Lg. Bdy. Reg. 4
- Rainier....⅛ Lg. Bdy. Reg. 4
- Ranger....⅛ Lg. Bdy. Reg. 4
- Rapid....⅛ Stand. 1
- Reliance....⅛ Lg. Bdy. Reg. 4
- Reo....⅛ Inch Long 7
- Republic ⅛ Lg. Bdy. Reg. 4
- Reynolds ⅛ Lg. Bdy. Reg. 4
- Riddle....⅛ Stand. 2
- Riker....⅛ Stand. 1
- Robinson (Fire)....⅛ Lg. Bdy. Reg. 4
- Rowe....⅛ Stand. 1
- Ruggles....⅛ Stand. 1
- St. Cloud....⅛ Lg. Bdy. Reg. 4
- Sandow....⅛ Lg. Bdy. Reg. 4
- Sanford....⅛ Lg. Bdy. Reg. 4
- Schacht....⅛ Lg. Bdy. Reg. 4
- Schwartz....⅛ Stand. 2
- Seagrave (Fire)....⅛ Lg. Bdy. Reg. 4
- Selden....⅛ Lg. Bdy. Reg. 4
- Seneca....⅛ Stand. 1
- Service....⅛ Stand. 2
- Shelby....⅛ Lg. Reg. 5
- Signal....⅛ Lg. Bdy. Reg. 4
- Southern....⅛ Lg. Bdy. Reg. 4
- S & S....⅛ Lg. Bdy. Reg. 4
- Standard....⅛ Stand. 2
- Stegeman....⅛ Stand. 1
- Sterling....⅛ Lg. Bdy. Reg. 4
- Stewart....⅛ Reg. 3
- Studebaker (to '20)....½ In (from '20)..⅜ Stand. 1
- Sullivan....⅛ Lg. Bdy. Reg. 4
- Superior....⅛ Lg. Bdy. Reg. 4
- Taylor....⅛ Stand. 1
- Tiffin....⅛ Lg. Bdy. Reg. 4
- Titan....⅛ Lg. Bdy. Reg. 4
- Tower....⅛ Lg. Bdy. Reg. 4
- Traffic....⅛ Stand. 1
- Transport....⅛ Lg. Bdy. Reg. 4
- Traylor....⅛ Lg. Bdy. Reg. 4
- Triangle ⅛ Lg. Bdy. Reg. 4
- Triumph....⅛ Lg. Bdy. Reg. 4
- Trojan....⅛ Stand. 1
- Twin City....⅛ Stand. 2
- Ultimate....⅛ Long Reg. 5
- Union....⅛ Lg. Bdy. Reg. 4
- United....⅛ Lg. Bdy. Reg. 4
- U. S....⅛ Lg. Bdy. Reg. 4
- Universal....⅛ Lg. Bdy. Reg. 4
- Velie....⅛ Lg. Bdy. Reg. 4
- Vim....⅛ Lg. Bdy. Reg. 4
- Walker-Johnson....⅛ Lg. Bdy. Reg. 4
- Walter....⅛ Lg. Bdy. Reg. 4
- Ward La France....⅛ Lg. Bdy. Reg. 4
- Watson....⅛ Lg. Bdy. Reg. 4
- Western....⅛ Stand. 1
- White....Metric A-84
  - " (Hvy)....⅛ L. Bdy. Reg. 4
- Wichita....⅛ Stand. 2
- Wilcox....⅛ Lg. Bdy. Reg. 4
- Winchester....⅛ Stand. 2
- Winther....⅛ Lg. Bdy. Reg. 4
- Wolverine ⅛ Lg. Bdy. Reg. 4

TRACTORS

- Advance-Rumely....⅛ Reg. 3
- Albaugh-Dover....⅛ Lg. Stand. 6
- Alligator....½ Inch Long 8
- Allis-Chalmers....⅛ Lg. Bdy. Reg. 4
- All Work....⅛ Stand. 1
- American....⅛ Stand. 2
- Appleton....⅛ Reg. 3
- Aultman-Taylor....⅛ Lg. Bdy. Reg. 4
  - (Mod 15, 30) ⅛ Reg. 3
  - " (all others) ½ In. A-14
- Austin....½ Inch A-14
  - "....⅛ Regular 3
- Autohorse....⅛ Stand. 3
- Automotive....⅛ Reg. 3
- Avery (Mod. 5, 10)....⅛ Reg. 3
  - "....½ Inch A-14
  - "....½ In Long 7
- Ballor....⅛ Lg. Bdy. Reg. 4
- Bates Steel Mule..⅛ Lg. Stl. 6
- Bean Track Pull....⅛ Stand. 2
- Beeman Garden....½ In. A-14
- Belt-ul....⅛ Lg. Bdy. Reg. 4
- Boring....⅛ Reg. 3
- Buffalo....⅛ Lg. Bdy. Reg. 4
- Buhler....⅛ Lg. Stl. 6
- Bull....⅛ Lg. Bdy. Reg. 4
- Bullock Creeping Grip....⅛ Lg. Bdy. Reg. 4
- Case....⅛ Reg. 3
- Clark....⅛ Lg. Bdy. Reg. 4
- Cletrac....⅛ Stand. 2
- Common Sense....⅛ Stand. 2
- Dart....⅛ Reg. 3
- Dauch....⅛ Stand. 1
- Dependable....⅛ Lg. Bdy. Reg. 4
- Dill....⅛ Lg. Stand. 6
- Do-It-All....⅛ Lg. Stand. 6
- Eagle....⅛ In. Long 7
- Elgin....⅛ Stand. 2
- Emerson Brantingham....½ Inch A-14
- Fageol....⅛ Lg. Bdy. Reg. 4
- Farm Horse....⅛ Lg. Bdy. Reg. 4
- Fitch....⅛ Lg. Bdy. Reg. 4
- Flour City....½ In. Long 7
- Fordson....½ In. Long X Long
- Fox....⅛ Inch A-14
- Franklin....⅛ Lg. Bdy. Reg. 4
- Frick....⅛ Lg. Stand. 6
- Go (Nat'l)....⅛ Lg. Bdy. Reg. 4
- Graham....⅛ Lg. Bdy. Reg. 4
- Gran Belt....⅛ Lg. Bdy. Reg. 4
- Gray....⅛ Lg. Bdy. Reg. 4
- Happy Farmer....½ In. Long 7
- Harrington....½ In. Ex. Lg. A-34
  - "....⅛ Lg. Bdy. Reg. 4
- Hart Parr....½ In. Long 7
- Heider....⅛ Stand. 1
- Holt....⅛ Reg. 3
  - "....⅛ Metric A-83
- Howell (to '18)....⅛ Lg. Stand. 6
  - (from '18)....½ Inch A-13
- Huber....⅛ Lg. Bdy. Reg. 4
- I H C....⅛ Standard 1
- Illinois....⅛ Lg. Bdy. Reg. 4
- Indiana....⅛ Lg. Bdy. Reg. 4
- Jacobson....½ Inch A-14
- J. & T....⅛ Lg. Stand. 6
- Kardell....⅛ Reg. 3
- Keck-Gonnerman ½ Inch A-14
- Kuskade....½ Inch A-14
- Knox....⅛ Lg. Stand. 6
- La Crosse....½ Inch A-14
- Lauson....⅛ Regular 3
- Lightfoot (Monarch)....⅛ Lg. Reg. 5
- Linn....⅛ Lg. Bdy. Reg. 4
- Little Giant....½ In. Long 7
- Matthews....⅛ Lg. Stand. 6
- Merry Garden....⅛ Stand. 1
- Midwest....⅛ Stand. 1
- Minneapolis....½ Inch A-14
  - "....⅛ Regular 3
- Mohawk....⅛ Stand. 2
- Moline....½ Inch A-14
- National....⅛ Reg. 3
- Nelson....⅛ Lg. Bdy. Reg. 4
- Neverslip....⅛ Lg. Stand. 6
- New Britain....½ Inch A-14
- Nichols & Shepard..½ In. A-14
- Parrett (to '21)....½ Inch A-14
  - (from '21)....⅛ Reg. 3
- Pawling & Harnischfeger....⅛ Lg. Body Reg. 4
- Peoria....⅛ Lg. Bdy. Reg. 4
- Pledmont....⅛ Stand. 2
- Pioneer....½ Inch A-14
- Plowman..⅛ Lg. Bdy. Reg. 4
- Pontiac....½ Inch A-14
- Post....⅛ Lg. Bdy. Reg. 4
- Premocar..⅛ Lg. Bdy. Reg. 4
- Ranger....⅛ Stand. 2
- Reed....⅛ Lg. Bdy. Reg. 4
- Reliable....½ In. Ex. Lg. A-34
- Rumely....⅛ Lg. Bdy. Reg. 4
- Russell....⅛ Lg. Bdy. Reg. 4
- Samson....⅛ Lg. Bdy. Reg. 4
- Sandusky....⅛ Stand. 1
- Shelby....⅛ Lg. Reg. 5
- Short-Turn....⅛ Reg. 3
- Sprywheel....½ In. Long 7
- Square Turn....⅛ Lg. Stand. 6
- Stewart....⅛ Lg. Bdy. Reg. 4
- Stockton....⅛ Reg. 3
- Tiogo....⅛ Reg. 3
- Titan....⅛ Regular 3
- Topp-Stewart....⅛ Reg. 3
- Toro....⅛ Lg. Bdy. Reg. 4
- Townsend....½ Inch A-14
- Tow Pull....⅛ Stand. 2
- Tracklayer....½ Inch A-14
- Traylor....⅛ Lg. Bdy. Reg. 4
- Triumph..⅛ Lg. Bdy. Reg. 4
- Trundaar....½ Inch A-14
- Turner....⅛ Reg. 3
- Twin City....⅛ Stand. 2
- Uncle Sam ⅛ Lg. Bdy. Reg. 4
- Ursus....⅛ Stand. 2
- Utilitor....⅛ Standard 1
- Velie Baltwell ⅛ L. Bdy. Reg. 4
- Wallis Cub....⅛ Stand. 2
- Waterloo Boy....½ Inch Lg. Long 7
  - "....⅛ Ex. Lg. A-34
- Wetmore....⅛ Lg. Bdy. Reg. 4
- Whitney....⅛ Lg. Bdy. Reg. 4
- Wilson....⅛ Stand. 2
- Wisconsin....½ In. A-14
- Yankee....⅛ Reg. 3
- Yuba (12, 20)....⅛ Reg. 3
  - " (28, 30, 40, 70) ½ In Long 7

PORTABLE

A strictly high-grade line of portable electric lamps. The bases or portables are attractively finished and with the beautiful art glass shades make a striking appearance.

All Have Two Lights

Height of base 12½ inches; total height 23 inches; furnished with No. 934½ overlaid art glass shade, diameter 18 inches, depth 8 inches.

No. 1810½—Copper finish, portable with amber shade. Weight, each, about 15 pounds. Each..$19.00

Height of base 12½ inches, total height 23½ inches; furnished with No. 819½ overlaid art glass shade, diameter 18½ inches, depth 8 inches.

No. 1672½—Flemish finish portable with amber and salmon pink shade. Weight, each, about 13½ pounds. Each $23.50

ELECTRIC LAMPS

Height of base, 11 inches; total height, 19¼ inches; furnished with No. 959½ overlaid art glass shade, diameter 16½ inches, depth 6½ inches.

No. 1838½—Babylonian finish portable with amber shade. Weight each, about 12½ lbs. Each $14.00

Base and shade packed separately.

The Wallace portable electric lamp can be used in any position or at any angle. The spiral spring, which is concealed in the base, clamps it securely to bed rod, dressing table, desk or chair. Eight feet of extension cord and patent plug connect it with any electric fixture and enables one to hang or stand it anywhere. Lamp shade can be tilted up or down, or sideways. No matter where you want light the Wallace will concentrate the light just there. Height, complete with shade, 11½ inches; diameter of base, 4½ inches; diameter of shade, 5 inches.

Wallace, nickel finish, without globe. Per dozen...$59.60
Wallace, brass finish, without globe. Per doz. 54.00
Wallace, bronze finish, without globe. Per dozen.. 59.50
Wallace, verdigre finish, without globe. Per dozen. 59.50

Weight, boxed, 1 pound each.

Special Assortment.

Special Assortment—Consisting of 6 brushed brass finish, 2 nickel finish, 2 bronze finish, and 2 verdigre finish; weight, per assortment, about 12 pounds. Per assortment.....$54.00

GASOLINE LAMPS

Quick-Lite.

The Quick-Lite has three distinctive features that make it different from all other gasoline lamps.

The first and most important is that it lights with common matches instead of being generated with an alcohol torch. The great advantage of this is at once apparent. There is no expense for alcohol and no bother of getting the torch to light the Quick-Lite.

The second feature is the simplicity of maintenance. Instead of having to clean the generators they are cheap enough to throw away. In experimental tests generators have burned from 500 to 1,000 hours without cleaning. This means that the Quick-Lite can be depended upon to burn three hours every night for six to twelve months with little attention. An extra generator is furnished with every lamp, thus insuring at least a year's use without additional expense.

The third advantage is that the burner is supported by the air intake tube which takes in the air below the mantles where it cannot be affected by heat.

All metal parts heavily nickel-plated.

No. CQ307 Opal ribbed shade, height over all 20 inches, diameter of fount 7 inches, diameter of shade 10 inches; fount holds 3 pints, lasts 16 to 18 hours. Shipping weight, 10 pounds. Each $12.50

Equipment furnished with each lamp—2 mantles, pump, wrench, hanger and extra generator.

One in a box.

A new and pleasing design. No. CQ329 is the regular lamp equipped with a handsome opal shade.

No. CQ329—Shipping weight, each, 10 pounds. Each $12.50

No. CQ318 Quick-Lite is the regular lamp with fancy instead of plain ribbed shade. Equipped with No. 318 shade which has always been a good seller. This shade is decorated in brown and tan tints with delicate green vine and pink wild roses.

One in carton complete with shade, mantles, pump, wrench, hanger, cleaning pick and extra generator.

No. CQ318—Shipping weight, 10 pounds. Each.....$14.00

No. CQF318—Same as CQ318 but with fount finished in Flemish Brass. Each $16.00

No. CQ324 is the regular lamp equipped with a handsome mellotone opal shade, green tinted with small wild flowers.

One in a carton complete with shade, mantles, pump, wrench, hanger, cleaning pick and extra generator.

No. CG324—Shipping weight, each, 10 lbs. Each.....$14.00

No. CQF324—Same as CQ324 but with fount finished in Flemish Brass. Each $16 00

No. CQ317 is the regular lamp equipped with a handsome opal shade which has the popular bead fringe. A very acceptable number.

One in carton complete with shade, mantles, pump, wrench, hanger, cleaning pick and extra generator.

No. CQ317—Each $14.80

No. CQ335A—Has regular nickel fount but is equipped with a beautiful green and white shade trimmed with bead fringe. An unusually attractive lamp. One in a carton complete with shade, mantles, pump, wrench, hanger, cleaning pick and extra generator. Each.....$16.50

No. CQF335A—Same as CQ335A but with fount finished in Flemish Brass. Each $18.00

GASOLINE LAMPS

Lindsay.

Can be used anywhere with perfect safety; cannot explode; complete with special detachable Coleman fount, extra "Quick Lite" generator, pump, wrench and six mantles.

No. 2416 — Stands 24 inches high with 16 inch art glass metal 6-panel shade; heavy cast metal base; beautifully finished in rich antique bronze; weight, each, about 30 pounds.
Each $27.00

Securely packed, one complete lamp in a

Note—The above lamp, at a small expense, can be turned into an electric lamp at anytime.

CHANDELIER

Quick-Lite.
Model PQ329.

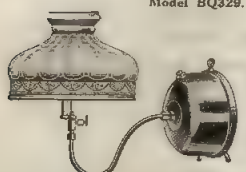
This makes a very convenient and handsome lamp for churches, schools, stores and other public buildings. The lamp is made of brass heavily nickeled and fitted with the universal shade holder, on which other shades or globes may be used. Capacity of fount, 6 pints; gives light of 600 candle power.

Model PQ329—Quicklite Chandelier Lamp. Shipping weight, 16 lbs. Each.....$24.00

One in carton complete with shades, 4 mantels, pump wrench, pick and 2 extra generators.

‡BRACKET

Quick-Lite.
Model BQ329.



This portable bracket lamp may hung on the wall or set on a table, as desired. Makes an ideal reading lamp and is very convenient for use over desks, tables or counter. Capacity of fount, 3 pints; gives light of 300 candle power. Made of brass, heavily nickel plated.

Model BQ329—Quicklite Bracket Lamp. Shipping wt., 10 lbs. Each $13.50

One in a carton complete with shade, 2 mantles, pump, wrench, pick and 2 extra generators.

"QUICK-LITE" SUPPLY CASES

List of Contents.

4	Q57 Lamp Valves	2	Q Tip Wrenches
3	Q Pumps	4	Q64b Filler Plugs
1	Q11 Air Intake	4	Q23 Burner Caps and Screens
4	Q25 Burner Cap Screens	4	Q24 Burner Tubes
1	Q26 Mixing Chamber.	1	LQ55 Valve Stem and Nut
1	Q56b Valve Stem and Nut	1	C45 Handle Fibre
2	C46 Handle Caps	3	C69 Lamp Hangers
2	C47 Handle Lock Nuts	6	Q Pump Leathers
6	Q86 Gaskets	1	Q63 Shade Holder
1	Q18 Gas Tips	2	LQ41 Ventilator Ball Nuts
2	Q41 Shade Holder Screws	3	LQ Wrenches
3	Q Wrenches	12	.007 Tip Cleaning Picks
1	Q17 Casting	12	Q99 Generators

For Lamp Only.

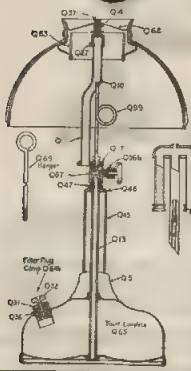
	List price each
Q26—Mixing Chamber	$0.80
Q41—Shade Holder Screws	.10
C45—Handle Fibre	.40
C46—Lamp Handle Caps	.10
C47—Handle Lock Nut	.10
Q56B—Valve Stem and Nut	.40
Q57—Lamp Valve complete	1.00
Q63—Lamp Shade Holder	.40
C69—Lamp Hanger Rod	.10
Q —Wrench	.30

For Lantern Only.

LQ41—Ventilator Ball Nut	$0.10
LQ55—Valve Stem and Nut	.40
LQ57—Lantern Valve complete	1.00
LQ —Wrench	.30

For Either Lamp or Lantern.

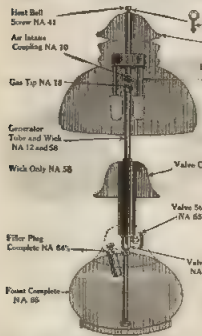
Q11—Air-Intake, or Burner Support	$0.60
Q17—Casting	.20
Q18—Gas Tip	.10
Q23—Burner Cap complete	.30
Q24—Burner Tube	.20
Q25—Screen for Burner Cap	.05
Q36—Gasket for Filler Plug	.05
Q64B—Filler Plug complete	.80
Q99—Quick-Lite Generator	.50
Q —Tip Wrench	.10
007 —Tip Cleaning Pick	.10
Q —Pump	1.00
Q —Pump Leather	.10



REPAIRS FOR MODEL "C-Q" QUICK-LITE LAMPS

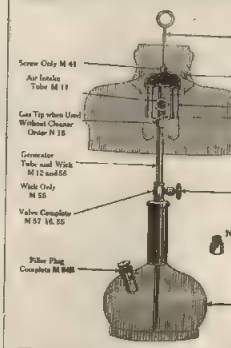
‡C5—Burner Tube Support only $0.50
Q11—Burner Support Tube only ..... .60
‡CL13—Burner Support Casting .20
Q17—Burner Support Casting. .20
Q18—Gas Tips ..... .10
‡Q23-25—Burner Cap complete .30
‡Q24—Burner Tube ..... .20
Q25—Burner Cap Screen, 2 for .10
Q26—Mixing Chamber ..... .80
‡Q32—Air Stem ..... .30
‡C35—Handle Metal Washer, 2 for ..... .10
Q36—Lead Gaskets, 2 for..... .10
‡AO38—Clamp Screw ..... .10
Q41—Shade Holder Screw.... .10
‡C45—Handle, Fibre only.... .40
C456—Handle, (handle, cap and hat) Composition.....$0 60
‡C46—Fibre Handle Cap.. . .10
‡C47—Handle Lock Nut... .10
Q56B—Valve Stem and Nut... .40
Q57 —Valve complete 1.00
Q62—Shade Clamp ..... .20
‡Q63—Universal Shade Holder .40
Q64B—Filler Plug complete.. .80
‡C65—Fount with Filler Plug. 7.50
C89—Hanger ..... .10
Q70—Burner, Generator and valve assembled complete 4.00
Q99—Generator complete .. .50
Q—Wrench ..... .30
Q—Pump 1.00
‡Q—Tip Wrench ..... .10
Q—Pump Leather ..... .10
‡Q—Tip Cleaning Needle.... .10

REPAIRS FOR MODELS "A", "AA" AIR-O-LITE LAMPS


Heat Bell Screw NA 41
NA Hanger
Air Intake Coupling NA 39
Heat Bell NA 39
Burner Tube NA 24
Gas Tip NA 18
Generator Tube and Wick NA 12 and 58
Wick Only NA 58
Valve Cover NA 34
Valve Stem and Nut NA 65 and 16
Filler Plug Complete NA 64½
Valve Complete NA 57 16,55
Fount Complete NA 66

NA39—Heat bell . $0.60
NA40—Heat bell stem. .10
NA41—Heat bell screw... .10
‡NA45—Handle complete .60
NA46—Handle cap 40
‡NA48—Set collar & screw .20
‡NA54a—Air stem complete .40
‡NA55-16—Valve stem complete ..... .40
NA57-16-55—Valve complete 1.00
NA58&59—Asbestos filter and screens ..... .20
NA58&12—Generator tube and filter 1.30
‡NA63—Metal chimney .40
‡NA10—Air-intake coupling $0.40
‡NA11—Air-intake tube .. .40
NA18—Gas tip. .30
‡NA22—Bunsen tube ..... .20
NA23 & 25—Burner cap and screens .50
NA24—Burner tube ..... .20
‡NA25—Burner cap screen, 2 for 10
NA26—Mixing chamber .. .80
‡NA32—Air Stem for Filler plug .40
NA34—Valve cover ..... .80
NA36—Filler plug gasket, 2 for .... .10
NA64½—Filler plug complete . .$1.00
‡NA66—Heat bell plate and spring ..... .20
‡NA70—Burner complete (assembled) 4.00
‡NA—Fount with filler plug 8 00
‡NA—Generator, tip, valve and handle 3.00
NA—Hanger rod .10
NA—Lighting torch .20
NA—Pick ..... .10
NA—Pump 1.00
NA—Pump leathers ..... .10
NA—Wrench ..... .30

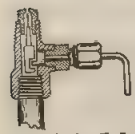
‡REPAIR PARTS FOR MODEL "CTN" AND "CT" AIR-O-LITE LAMPS


Hanger M 89
Screw Only M 41
Shade Holder Complete M 63
Air Intake Tube M 11
Burner Tube M 24
Gas Tip when Used Without Cleaner Order N 18
Automatic Tip Cleaner Complete TC 25
Generator Tube and Wick M 12 and 58
Wick Only M 58
Valve Stem and Nut M 55 and 16
Valve Complete M 57 16 55
N 18 Interchangeable with Automatic Tip Cleaner TC 25
Filler Plug Complete M 64B
Fount Complete M 66

CT26—Mixing Chamber (to use without Cleaner) $1.60
CT36—Lead Gasket, 2 for. .10
CT41—Shade Holder Screw .10
CT45—Handle (Fibre only) .40
CT46—Fibre Handle Cap... .10
CT47—Handle Lock Nut .10
CT56b—Valve Stem and Nut ..... .40
CT57—Valve complete 1.00
CT58-59—Filter Wick and Screen ..... .20
CT63—Shade Holder complete ..... .40
CT64b—Filler Plug complete ..... .80
CT65—Fount complete .. 7.50
TC8 — Needle Shank ..$0.10
TC9 — Needle Point . . .10
CT11—Air Intake .30
CT12-58—Generator tube and Wick .50
CT18 — Tip only (to use without Cleaner) .... .20
CTN18 - Gas Tip . .20
CT23-25—Burner Cap complete .30
CT24 Burner Tube. .20
CT25 - Burner Cap Screen, 2 for . .10
CTN25—Cleaner and Tip complete .30
CTN26—Mixing Chamber (to use with Cleaner) 1.60
CT69—Hanger $0.20
CTN70—Burner complete (to use with Cleaner) 3.00
CT70—Burner complete (to use without Cleaner) 3.00
CTN Generator, Valve, Cleaner and Tip. 4.50
CT—Generator, Valve and Gas tip 3.00
CTN—Burner, Generator, Valve and Cleaner assembled 7 50
CT -Lighting Torch ..... .20
CT—Pump 1.00
CT—Pump Leather . .... .10
CT—Wrench ..... .30

Items marked thus ‡ not carried in stock, but shipped direct from factory.

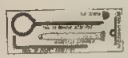
CLEANER TIPS



Cut shows automatic cleaner tip furnished on Model PB Air-O-Lite lamps. Not furnished on other models.

M. T. C. (or T. L. T. C.) No. 25—Each.....$0.80

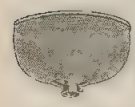
Cut shows cleaning tools, asbestos and screen furnished with Air-O-Lite lamps.



Cleaning tools or sets. Each.....$0.30

No. 007—Cleaning pick. Each.....10

BUG SCREENS



No. 333—White asbestos coated wire bug screen for Nos. CQ307, CQ317B, CQ318, CQ322 and CQ324. Quicklight lamps. Each $1.80

SHADES

No. 318

No. 324

No. 307—Opal ribbed shade, 10 inches diameter. For pattern see illustration of No. CQ307 Coleman lamp. Each $2.00

No. 329—Opal shade, standard for Coleman lamp. For pattern see illustration of No. CQ329 lamp. On account of the large panel design and quality material used, this shade reduces breakage to a minimum. Each..$2.00

No. 318—Opal glass, richly decorated in deep tones of tan and brown, 11 inches in diameter. Each.$5.00

No. 324—Opal mellotone glass of pleasing design, 10 inches in diameter. Each.....$5.00

No. 317B—Shade etched outside; has attractive nickel plated band; 10¼ inches in diameter. Each $3.40

GLOBES

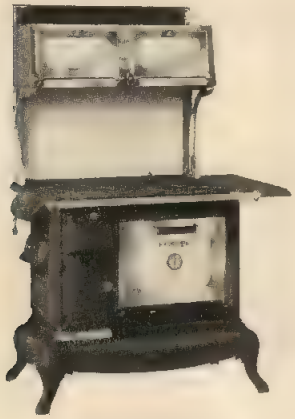
‡No. 321—Globe 9¼ inches in diameter, 4 inches at top and bottom, upper ⅝ frosted, lower ¼ clear, designed to protect mantles from bugs and insects. Each.....$2.80

CAST IRON RANGES

FOSTER'S HIGH GRADE

Made of the finest quality of carefully selected pig iron, by skilled workmen and carefully inspected to see that all parts are perfect. Flues are large and will successfully burn even the most inferior grades of soft coal. Reservoirs are of cast iron with porcelain lining which prevents their rusting. They are wholly incased and have separate dampers so the heat can be forced under them or diverted at will. This separate damper makes the reservoir style bake as well as a square range because all heat can be thrown under the oven when desired.

The high closets are made of polished Armco rust resisting iron and are handsome and substantial.



Without Reservoir

Duplex Grates for Coal or Wood

Square, with high closet, white enameled splasher and door panel, with oven thermometer and towel bar, nickel plated trimmings

Has 7 inch pipe connection with back collar joint. Six cooking holes. When a water front is used, the other linings can be replaced without disconnecting it. The oven is large and perfectly square. Lids, centers and fire linings are very heavy and durable.

Nos.	H-G-8-18	H-G-8-20
Number of holes	6	6
Diameter of holes, in	8	8
Size of oven, in	18x18x13	20x20x14
Height body, in.	33	34
Size of top, in.	27x33	29x35
Weight crated, lbs.	475	525
Each	$119.00	126.00

Extra Water Front—For use with circulating boiler, add $12.00 to list price.

With Reservoir

Duplex Grates for Coal or Wood

With high closet, white enameled splasher and door panel, oven thermometer and towel bar, nickel plated trimmings.

Has 7 inch pipe connections with back collar joint. Six cooking holes. The oven is large and perfectly square. Lids, centers and fire linings are very heavy and durable

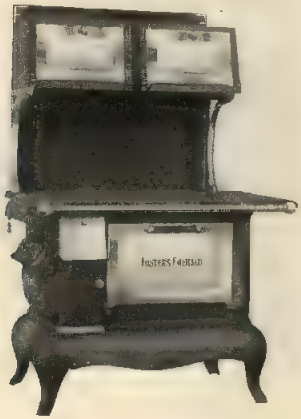
Nos.	H-G-8-18R	H-G-8-20R
Number of holes	6	6
Diameter of holes, in	8	8
Size of oven, in	18x18x13	20x20x14
Height body, in.	33	34
Size of top, in.	27x44	29x46
Weight crated, lbs.	540	600
Each	$137.00	144.00

CAST IRON RANGES

FOSTER'S EMERALD

Made of the finest quality of carefully selected pig iron, by skilled workmen and carefully inspected to see that all parts are perfect. Flues are large and will successfully burn even the most inferior grades of soft coal. Reservoirs are of cast iron with porcelain lining which prevents their rusting. They are wholly incased and have separate dampers so the heat can be forced under them or diverted at will. This separate damper makes the reservoir style bake as well as a square range because all heat can be thrown under the oven when desired

The high closets are made of polished Armco rust resisting iron and are handsome and substantial.



WITHOUT RESERVOIR

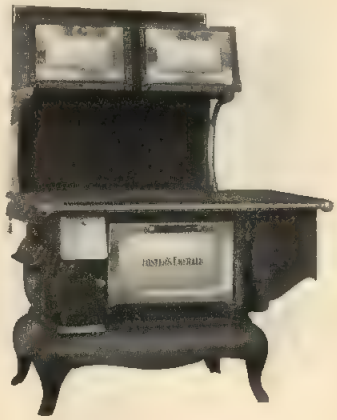
Duplex Grates for Coal or Wood

Square, with high closet and plain sanitary base, white enameled high closet and oven doors, with towel bar, nickel plated trimmings.

Has 7 inch pipe connection with back collar joint. Dampers located on side of stove, which eliminates reaching across the stove, three piece back wall of fire box makes replacements easy and inexpensive. The oven is large and perfectly square. Lids, centers and fire linings are very heavy and durable.

No.	68–18
Number of holes	6
Diameter of holes, in.	8
Size of oven, in.	18x18
Height body, in.	31
Size of top, in.	23 ½x38 ½
Weight crated, lbs.	415
Each	$100 00

Extra Water Front—For use with circulating boiler, add $11.00 to list price.



WITH RESERVOIR

Duplex Grates for Coal or Wood

With high closet and plain sanitary base, white enameled high closet and oven doors, with towel bar, nickel plated trimmings.

Has 7 inch pipe connection with back collar joint. Dampers located on side of stove, which eliminates reaching across stove. Three piece back wall of fire box, makes replacements easy and inexpensive. The oven is large and perfectly square. Lids, centers and fire linings are very heavy and durable

No.	68–18R
Number of holes	6
Diameter of holes, in.	8
Size of oven, in	18x18
Height body, in.	31
Size of top, in.	23 ½x44
Weight crated, lbs.	475
Each	$116.50

CAST IRON RANGES

FOSTER'S AGATE

Made of the finest quality of carefully selected pig iron, by skilled workmen and carefully inspected to see that all parts are perfect. Flues are large and will successfully burn even the most inferior grades of soft coal. Reservoirs are of cast iron with porcelain lining which prevents their rusting. They are wholly incased and have separate dampers so the heat can be forced under them or diverted at will. This separate damper makes the reservoir style bake as well as a square range because all heat can be thrown under the oven when desired.

The high closets are made of polished Armco rust resisting iron and are handsome and substantial.

Without Reservoir

Duplex Grate for Coal or Wood.

Square, with high closet and plain sanitary base, white enameled door panels, with towel bar, nickel plated trimmings.

Has 7 inch pipe connection with collar back of high closet The back-wall is in three sections Has drop fire door. Covers, centers and fire linings are double strength.

No.	68–18
Number of holes	6
Diameter of holes, in.	8
Size of oven, in.	18x18
Height body, in.	31
Size of top, in.	23½x33½
Weight crated, lbs.	415
Each	$96.00

Extra Water Front—For use with circulating boiler, add $11.00 to list price.

Note—The above range can also be furnished less the high closet.

With Reservoir

Duplex Grate for Coal or Wood

With high closet and plain sanitary base, white enameled door panels, with towel bar, nickel plated trimmings.

Has 7 inch pipe connection with collar back of high closet The back-wall is in three sections Has drop fire door. Covers, centers and fire lining are double strength. Reservoir lids are japanned and baked and cannot rust.

No.	68-18R
Number of holes	6
Diameter of holes, in.	8
Size of oven, in.	18x18
Height body, in.	31
Size of top, in.	23½x44
Weight crated, lbs.	475
Each	$112.50

Note—The above range can also be furnished less the high closet.

CAST IRON RANGES

FOSTER'S OPAL

Made of the finest quality of carefully selected pig iron, by skilled workmen and carefully inspected to see that all parts are perfect. Flues are large and will successfully burn even the most inferior grades of soft coal. Reservoirs are of cast iron with porcelain lining which prevents their rusting. They are wholly incased and have separate dampers so the heat can be forced under them or diverted at will. This separate damper makes the reservoir style bake as well as a square range because all heat can be thrown under the oven when desired.

The high closets are made of polished Armco rust resisting iron and are handsome and substantial.

Without Reservoir

Duplex Grates for Coal or Wood

Square, with high closet and plain sanitary base, white enameled door panels, with towel bar, nickel plated trimmings.

Has 7 inch pipe connections with collar back of high closet. Covers and fire linings are very heavy. One reducing cover, in three pieces, furnished with each range. Oven door is balanced with a steel spring that can be quickly and easily replaced.

No.	68-18
Number of holes	6
Diameter of holes, in.	8
Size of oven, in.	18x18
Height, in.	31
Size of top, in.	23½x38½
Weight crated, lbs.	415
Each	$98.00

Extra Water Front—For use with circulating boiler, add $11.00 to list price.

Note—The above range can also be furnished less high closet.

With Reservoir

Duplex Grate for Coal or Wood

With high closet and plain sanitary base, white enameled door panels, with towel bar, nickel plated trimmings.

Has 7 inch pipe connection with collar back of high closet. Covers and fire linings are very heavy. One reducing cover, in three pieces, furnished with each range. Oven door is balanced with a steel spring that can be quickly and easily replaced.

No.	68-18R
Number of holes	6
Diameter of holes, in.	8
Size of oven, in.	18x18
Height, in.	31
Size of top, in.	23½x44
Weight crated, lbs.	475
Each	$114.50

Note—The above range can also be furnished less high closet.

CAST IRON RANGES

FOSTER'S FLYER

Made of the finest quality of carefully selected pig iron, by skilled workmen and carefully inspected to see that all parts are perfect. Flues are large and will successfully burn even the most inferior grades of soft coal. Reservoirs are of cast iron with porcelain lining which prevents their rusting. They are wholly incased and have separate dampers so the heat can be forced under them or diverted at will. This separate damper makes the reservoir style bake as well as a square range because all heat can be thrown under the oven when desired.

The high closets are made of polished Armco rust resisting iron and are handsome and substantial.

Without Reservoir

Duplex Grates for Coal or Wood

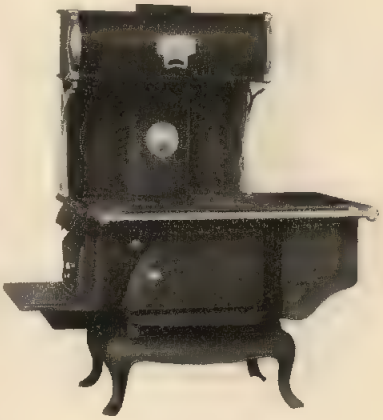
Square, with high closet and plain sanitary base, with towel bar, nickel plated trimmings.

Large sliding hearth, heavy three piece fire back, wire oven rack, oven shelf, top end shelf.

No.	**48A-18**
Number of holes	6
Diameter of holes	Four 8 in.; Two 6 in.
Size of oven, in.	18x18
Height body, in.	30
Height of high closet, in	28
Size of top, in.	26½x35½
Weight crated, lbs.	375
Each	$78.00

Extra Water Front—For use with circulating boiler, add $11.00 to list price.

Note—The above range can also be furnished less high closet.



With Reservoir

Duplex Grates for Coal or Wood

With high closet and plain sanitary base, with towel bar, nickel plated trimmings.

Large sliding hearth, heavy three piece fire back, wire oven rack, oven shelf, top end shelf.

No.	**48A-18R**
Number of holes	6
Diameter of holes	Four 8 in.; Two 6 in.
Size of oven, in.	18x18
Height body, in.	30
Height of high closet, in	28
Size of top, in.	26½x40
Weight crated, lbs.	425
Each	$94 50

Note—The above range can also be furnished less high closet.

GENERAL ELECTRIC COMPANY

General Office: SCHENECTADY, N. Y.

Sales Representatives in All Principal Cities
For Complete List of Offices, See Page 380

Manufacturer of

Complete Electrical Equipment

Mine Locomotives

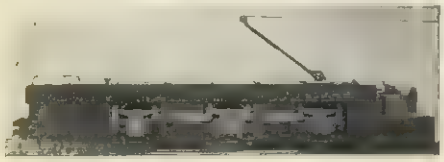
For more than thirty years the General Electric Company has manufactured mine locomotives of such durable construction that some of the first locomotives built are still in active service. This record shows that the Company understands the severe conditions of mine service, and builds locomotives that will stand up under the most trying conditions.

General Construction

The standard mine locomotive for sizes under 25 tons is the two-motor type. There are two forms of this type: one has the wheels placed inside the frame and the other has the wheels outside.

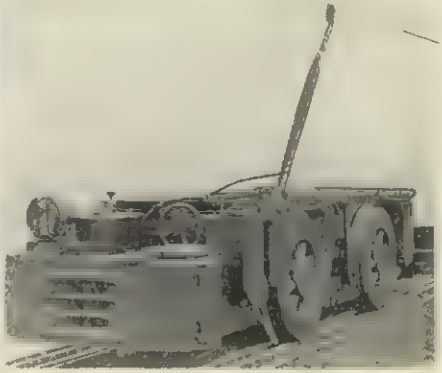
20-Ton, 2-Motor Locomotive

Selection between inside and outside frame types is determined by mine conditions. The outside frame type allows the maximum space between the wheels for motors and other equipment and gives more cab space for the motorman. The inside frame is used where side clearance in the mine will not permit the width of the outside frame type.



30-Ton, 2-Motor Locomotive

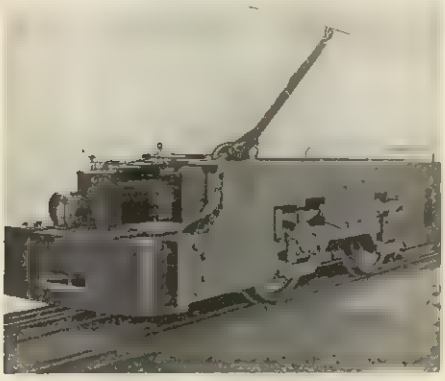
Weight is supported from the journal boxes by strong leaf springs. An equalizer bar between the springs transmits any change in wheel load due to uneven track and equalizes the weight on all wheels. This reduces chances for derailment and increases the available traction by distributing the weight more equally on all wheels. Riding qualities are improved, which minimizes wear on the track and adds to the comfort of the motorman. High clearance of the frame permits ready access to the lower parts of the wheels; re-railing devices may be put into position, and the locomotive easily put back on the track. Larger locomotives may be required, with greater motor capacity than can be obtained on two axles because of track gauge or other limitations. G-E three-axle three-motor locomotives are built for this service.



10-Ton Trolley Type Locomotive, Inside Frame Construction

Frames

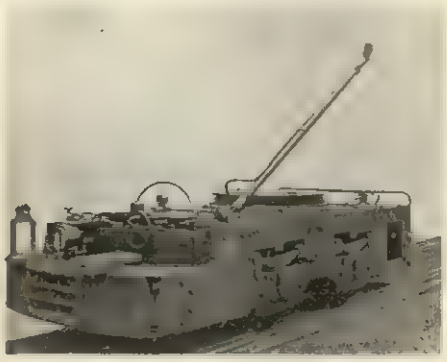
The side frames are cut from solid rolled steel slabs machined to proper shape and dimensions; the end frames are steel channel. Side and end frames are accurately fitted at the joints and rigidly held together with heavy corner angles and large through-bolts and rivets.



15-Ton Trolley Type Locomotive, Outside Frame Construction

Axle Boxes and Springs

Journal boxes on the outside frame locomotive are of the end thrust type. The heavy, bolted-on cover carries a renewable bronze wearing disc which takes thrust from the end of the axle, thus relieving the wheel hubs of all wear. A fiber dust guard is provided at the back, which, with the tight-fitting front cover, effectively excludes sand and dust.



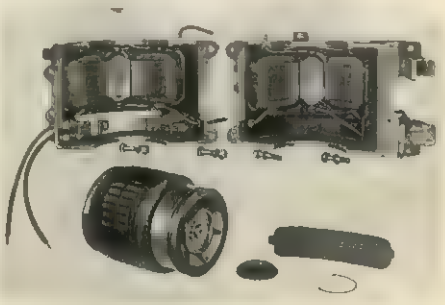
8-Ton Gathering Locomotive with Cable Reel, Outside Frame Construction

Journal boxes for the inside frame type are equipped with a removable oil cellar which can be dropped and repacked.

Motor

The motor used on G-E mine locomotives represents the most modern and most serviceable type of construction for mine haulage.

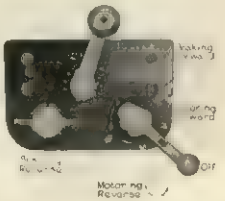
These HM motors are series-wound, totally enclosed, of the commutating pole, split frame type. With axle brackets and suspension lugs on lower frame, the motor is readily accessible for inspection and repairs without having to untruck. Over the commutator end a large hand hole, fitted with a dust-proof cover, makes inspection of commutator and brushes easy. The armature is carried in separate heads clamped between the motor frames, and is provided with anti-friction bearings. Practically the only attention required is reasonable inspection, replenishment of bearing lubricant, and renewal of worn out brushes. These motors are built in many sizes and capacities, for use on gauges as narrow as 18 inches.



Type HM Commutating Pole Motor Partly Disassembled, Showing Split Frame

Controllers

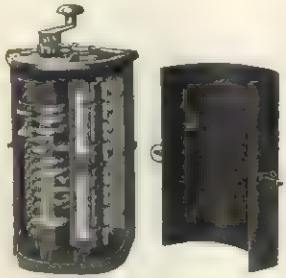
Each locomotive is equipped with controllers best suited to the conditions under which the locomotive is to work. Selection of the proper control



B-62 Electric Braking Controller Showing Operating Positions

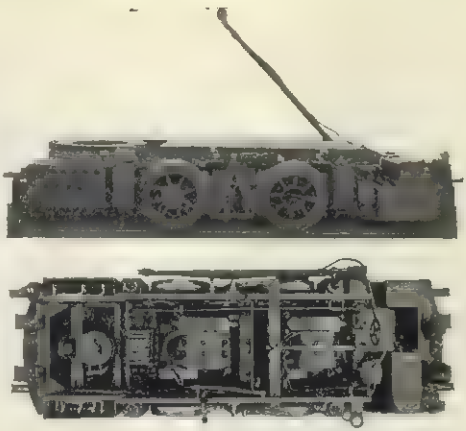
is determined by the weight of the locomotive, number of motors, trolley voltage, and the service for which it will be used.

The B-62 series-parallel electric braking controller is standard equipment on all locomotives 8 tons and under, and may be furnished on the larger types. In gathering service especially the locomotive must stop and start many times to gather and place cars in the rooms and make up a trip. With the B-62 controller the motorman has complete electrical control of stopping as well as starting. Besides speeding up the work the resulting economy in saving wear on brake shoes and wheels is considerable. Further marked economy is effected by requiring the motorman always to start and do all slow running on series points, which reduces resistance loss and peak load.

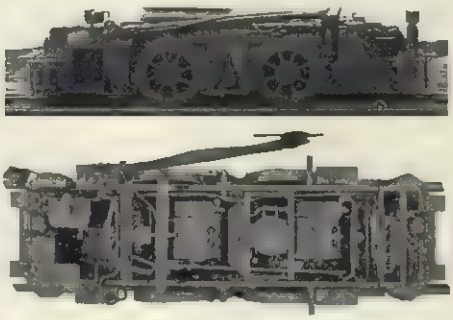


C-159 Controller

Type M contactor control is standard equipment for all locomotives 10 tons and above, and may be furnished on smaller locomotives if desired. The master controller governs the closing and opening of the contactors, which are used to make or break connections in all power circuits when current is on. An overload relay prevents excessive currents from damaging motors or control. Starting and slow running on series points results in economy of operation.



Side and Top Views of 6-Ton Trolley Type Gathering Locomotive with Cable Reel, Showing Low-Height Construction



Side and Top Views of 6-Ton Trolley Type Gathering Locomotive with Cable Reel, Inside Frame Construction

Gathering Locomotives

G-E gathering locomotives for use on short hauls between the working face and entry, where it is impracticable to install permanent track and trolley wire, are equipped with a cable reel. For working in thin seams, gathering locomotives of special low-height construction are manufactured.

When the locomotive operates from the cable reel, the cable hook is attached to the trolley wire in the entry opposite the room neck. The transfer switch is then thrown to the proper position, the reel motor switch snapped on, and the trolley pulled down. The cable reel motor automatically acts as a brake when paying out cable, and immediately winds it up when the direction of locomotive travel is reversed. The action of the cable is like that of a spring having infinite length.

Storage Battery Locomotives

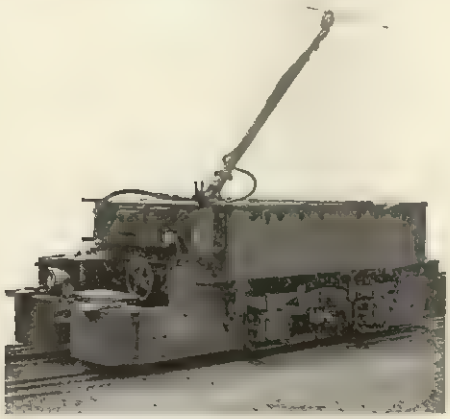
G-E storage battery locomotives for gathering service are equipped with the same type motor, and have the same design, construction, and single reduction gearing as G-E trolley type gathering

7-Ton Storage Battery Locomotive

locomotives. They are driven by power from long-life storage batteries, and are especially useful in mines where trolley systems are not practical and uneconomical. These storage battery locomotives are built in a number of sizes, for various needs. G-E engineers are at your service, to advise you in the selection of the proper size for your gathering requirements.

Combination Trolley and Battery Locomotive

The locomotive illustrated may be driven either by trolley or by its self-contained storage battery. The change from trolley to battery operation is accomplished by turning a simple switch in the controller. Slow speed from the battery while handling cars in the room, and high speed from the trolley during the trip make this G-E combination locomotive an ideal one for gathering service.



Combination Trolley and Storage Battery Locomotive

Renewal Parts Service

With each mine locomotive is furnished a renewal parts catalog for that particular locomotive, containing all information for identifying and ordering repair parts. This is but one feature of the exceptional G-E renewal part service for all mining apparatus.

Battery Charging Equipment

For the proper charging of locomotive storage batteries the General Electric Company manufactures individual and multiple unit battery charging motor generators, with charging panels. Individual motor generators are designed to regulate the current and taper the charge of a single battery.

A charging set is manufactured which takes power for charging batteries from the 250-volt trolley circuit, and a balancer set is employed to supply a charging voltage of approximately 125 volts.

Line Material

This Company manufactures for mine service a complete line of material used in the construction of trolley systems and track return, including brackets, suspension clamps, splicing sleeves, frogs, crossings, section switches and insulators, turnbuckles, rail bonds, bonding tools, etc. All iron and steel parts are protected against corrosion by electric-oven sherardizing, an exclusive G-E process.

The section on line material in your G-E Railway Supplies Catalog describes these and other improved G-E mine devices. Refer to it for details.

Mine Clamps

The Form L self-aligning clamp is 2 inches high and weighs only 5½ ounces, yet its holding power is exceptionally great. The fine threaded hollow clamping screw provides a grip sufficient to take approximately 1900 lb. pull, so that the wire would shear from the clamping jaws before the clamp loosens its grasp.

Form L2 Clamp

Form L Clamp

The Form L-2 clamp is similar to Form L except that it is longer and is not self-aligning. Two hollow clamping screws insure maximum strength. It can be used with grooved, Fig. 8, and round feeder wire.

End Views of Form W Clamp and Wire of Different Sections

The Form W clamp is suitable for use with grooved or Fig. 8 trolley wire and round feeder wire. This clamp is 2½ inches high; it screws on a standard suspension and is fastened on the wire by turning one large nut. Approximately 2500 lb. pull is required to remove the wire from the clamp.

Form W Clamp

Suspensions

Form H low mine suspension, measuring only 1 5/16 inches from the ear sear to the top bearing surface, is especially adaptable to mines where head

Form H Low Mine Suspension

room is limited. This suspension is of sturdy construction, as illustrated in the sectional view. It has wide creepage surface, combined with excellent holding power. An average of 8500 lb. down pull and 2000 lb. side pull is required to remove the stud from the shell.

Form HJ Flat Top Suspension

Form HJ flat top suspension is designed with the moulded insulation formed in a deep groove, to give an extra long creepage surface. Insulation side walls are vertical, to prevent the rapid accumulation of coal dust in mines where considerable moisture is present. This suspension may be attached either directly to the mine roof with a ⅝ inch expansion bolt, or to the roof timbers with a ⅝ inch lag screw.

In the Form H flat top suspension the compound is moulded in a shallow groove. The top bearing surface is 3½ inches in diameter, against 3 inches for Form HJ. All suspension have a standard ⅝

Form H Flat Top Suspension

inch stud moulded in high heat resisting compound. Suspensions have been subjected to 25,000 volts a-c. test without injury to the insulation.

Form Q-4 By-Pass Splicing Sleeve

Splicing Sleeves

Form Q-4 by-pass mechanical splicing sleeve is a decided improvement over the usual "tube-type" sleeve. By inserting one end of a wire in the sleeve and tightening the two set screws, the loose end can then be placed in the other end of the sleeve and drawn up to any desired tightness. After the wire has been made fast, the loose ends can be bent up at right angles and cut off if desired.

Rail Bonds

Well bonded track joints contribute to economical production by assuring maximum trolley voltage, maximum motor speeds, and maximum ton-miles per locomotive. On the other hand, owing to drop in trolley voltage, unbonded or poorly bonded joints cause motor operation on abnormally high current, which means frequent burn-outs and more locomotives laid up for repairs.

G-E arc welded bonds have steel faces welded in the factory to drop-forged copper terminals. The track welder merely makes the steel weld he is accustomed to making, and the bond becomes an integral part of the track. Bonds of several forms are available, as well as G-E equipment to weld them from 250- or 500-volt trolley circuits.

Metropolitan Phonograph

Standard Equipment — Beautiful Tone Quality

Equipped with Blood Universal Tone Arm

The tone quality of the Metropolitan phonograph is wonderfully sweet, capable of great volume, yet the ease with which the sound is controlled makes this phonograph suitable for use even in a small room. It delights the eye and ear alike. It is a phonograph of wonderful charm.

Every care has been taken to make this model supreme in appearance, no less than in musical quality. Its marvelous volume of sound and its quiet running motor, places this phonograph in the lead, mechanically.

The Metropolitan is more than a musical instrument. It is a fine piece of furniture. The beautifully modeled cabinet is mahogany finished throughout, is 42 inches high, 18½ inches deep, 16½ inches wide, complete with three large compartments for records.

No matter how perfect a phonograph may be in all other respects, it cannot give satisfaction unless the motor works perfectly. It must run quietly with even speed, it must wind easily and must possess ample power.

The Metropolitan phonograph is equipped with the latest Heineman Motor, which plays two 12-inch records, or three 10-inch records through, with unvarying speed, with one winding.

The worm gear of most improved construction and highly finished steel worm of special design and the two springs, are of carefully selected steel, perfectly tempered and completely enclosed.

The speed regulator is operated from tabulator on motor board running in automatically lubricating bearings.

The tone arm is our new Blood Universal type and permits the playing of disc records of any make and it plays them with all the purity and naturalness of tone the record is capable of yielding. By turning the sound box on the swivel joint it will play either vertical or lateral disc records. Made from the highest grade materials with the finest India Ruby Mica Diaphragms, and fully tested.

Model A22 Metropolitan Phonograph, Each 36.50

Metropolitan Phonograph

Plays All Disc Records — Highly Equipped

MAHOGANY FINISH

Nickel Plated Trimmings

Tone is the one and all important thing in a phonograph. The Metropolitan not only has tone, but is most pleasing in appearance, graceful and ornamental and it fully meets your expectations in design and finish.

When you hear the Metropolitan you will marvel that all music can be reproduced with such fidelity. It is just as though these famous musicians from all over the world had come to your home. You can almost feel their presence as they sing and play. Their living personalities are right before you, so perfectly does the Metropolitan reproduce every note, every delicate shading of the tone, every characteristic of the artist.

The handsomely modeled cabinet is Mahogany finished throughout and highly polished, is 46½ inches high, 20½ inches deep, and 18¾ inches wide, with four large compartments for holding records.

All the new and improved features that have proven successful, are incorporated in the Heineman motor which is the latest design of mechanical equipment.

This motor plays two 12-inch records or three 10-inch records with unvarying speed with one winding.

The two springs are of selected stock, perfectly tempered, completely enclosed, and operated in lubricant. The silent gears are of special form cut by the hobbing method, and the worm gear of the most approved construction and highly finished steel worm of spiral design.

The speed regulator is operated from tabulator on motor board, adjustment convenient and accurate. The wind is of the bevel gear type of special design with lock-nut feature on winding shaft.

The tone arm is our new Blood Universal type, which is the result of research and long years of experience. For beauty of lines and highest quality of tone reproduction this tone arm cannot be improved. It is universal in every meaning of the word, and simply turn the sound box on a swivel joint and it will play perfectly vertical or lateral cut records.

Model A23 Metropolitan Phonograph, Each 45.00

SHURE THE WINNER PRICE LIST

METROPOLITAN
CONSOLE PHONOGRAPH

Model A21
Two Door Style Console
Beautiful Design
Standard Equipment
Mahogany Finish

The New design Metropolitan console phonograph possesses marvelous tone. The phonograph that makes you forget you are listening to a phonograph. Forget for a moment all about its external appearance. Listen—then you will know that by whatever mechanical means it is accomplished you are hearing reproductions such as you never heard before.

This beautiful instrument is 33 inches high, 20½ inches deep and 35 inches wide, complete with two doors and five large compartments for holding records.

The Cabinet is made of best materials finished in Mahogany and the workmanship is strictly high grade in every respect.

This phonograph is equipped with the latest design Heineman Motor. Two springs of carefully selected stock even tempered completely enclosed and operating in lubricant. One full winding plays three ten-inch records through. Silent gears of special form cut by the hobbing method. Worm gear of most approved construction and highly finished steel worm of special design. Speed regulator operated from tabulator on the motor board. Adjustment convenient and accurate. Frame is of grey iron casting. Equipped with crank and 12 inch turnable.

New Blood Universal ball bearing tone arm that produces perfectly the correct tone of every record. Noted for its clear and natural reproduction. It carries a very high polish and its lines are beautiful. It is universal in every way, simply turn the sound box on a swivel joint and it will play any make record.

Model A21 Metropolitan Console Phonograph **Each 53.00**

WHOLESALE N. SHURE CO. CHICAGO.

THE NEW METROPOLITAN CONSOLE PHONOGRAPH

Model A20

Queen Anne Design

Two-Tone Effect **Gold Inlaid**

With the New Metropolitan Console phonograph you have at your command the music treasures of the world. It is a most beautiful design and lends graceful beauty and dignity to the finest surroundings. The most minute details of expressions of the human voice and of musical instruments are produced.

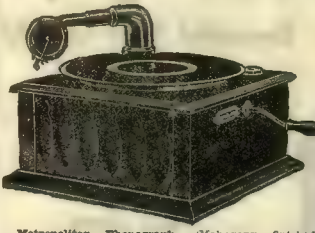
The cabinet is of genuine mahogany highly polished beautifully finished and artistically inlaid with gold. Cabinet is 33 inches high, 20½ inches deep, and 37 inches wide, complete with two doors and five large compartments for holding records.

This wonderful instrument is equipped with the latest design Heineman Motor. Two springs of carefully selected stock even tempered completely enclosed and operating in lubricant. One full winding plays three ten inch records through. Silent gears of special form cut by hobbing method. Worm gear of most approved construction and highly finished steel worm of special design. Speed regulator operated from tabulator on motor board. Adjustment convenient and accurate. Frame is of grey iron casting. Equipped with crank, 12 inch turntable.

New Blood Universal ball bearing tone arm that produces perfectly the correct tone of every record. Noted for its clear and natural reproduction. It carries a very high polish and its lines are beautiful. It is universal in every way, simply turn the sound box on a swivel joint and it will play any make record.

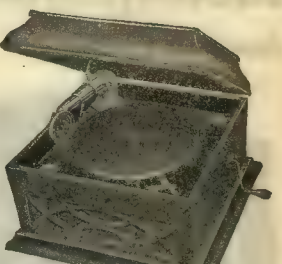
Model A20 New Metropolitan Console Phonograph **Each 62.50**

METROPOLITAN PHONOGRAPHS



Metropolitan Phonograph. Mahogany finished cabinet. Measures 12x5½ inches high. Well built and nicely polished lattice front covered with sateen. Equipped with a good working motor that will play a 12 inch record thru with one winding. Good sounding tone arm which will play all makes of records. Carries a 3 inch turntable. All metal parts nickel plated. Speed regulator and positive stop. Each machine has rubber feet so it will not scratch the table or stand. This number is being used largely by premium users. Each packed in a corrugated box.

Model A25, Each 9.00



Metropolitan Talking Machine. Handsome cabinet with hinge cover and lattice front. Finished in rich mahogany. Size 16x15x10½ inches. Equipped with a strong single spring motor. This motor is the best single spring motor made and will play through two 10-inch records with one full winding. Has 10-inch turntable, speed regulator and positive stop. Each in case.

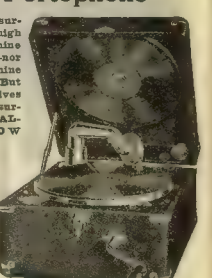
Model A19, Each 21.00

A New Portable

This new portable we say is the best value we have. It is compact so well made and finished that we can safely say that it will satisfy every owner. The cabinet is made of wood covered with imitation black leather with strong carrying handle. Equipped with a good dependable motor and a reproducer that supplies tone to its entire height. Positive stop, covered needle cup. Speed regulator and a place in cover to carry about 10 records. Light in weight. Disappearing tone arm and crank when closing cabinet. This is a new feature. Measures when closed 14x11⅞x6½ inches. Packed each in a box.

Model A26, Each 12.50

The Portophone



There's nothing surprising in a high grade talking Machine at a high price—nor a low grade machine at a low price. But the portophone gives you the double surprise of HIGH QUALITY at a LOW PRICE.

Model A24 Black Leatherette Covered

Price Each

16.00

This machine is one of the finest produced, and the best entertainer that can be had. Think of a Talking Machine that will play any make disc record with a smooth, perfect tone, and built right into a handsome Black Leatherette Carrying Case that you can take anywhere. The tone of the Portophone is equal in quality and volume to any $150.00 Machine. It has a top like the very highest priced Machines to keep out dirt and moisture. The crank is detachable and may be put inside when the machine is not in use, or to carry about. Record Holder for 6 records fits inside the lid when closed.

MINE SAFETY APPLIANCES CO.

Chamber of Commerce Building
PITTSBURGH, PA.

BRANCHES

CHICAGO
CLEVELAND
SAN FRANCISCO
DENVER
HUNTINGTON, W. VA.
ST. LOUIS
LOS ANGELES
NEW YORK
SEATTLE
PHILADELPHIA
PITTSBURG, KANS.
WILKES-BARRE, PA. (Kingston)

Everything for Mine and Industrial Safety

Gibbs Oxygen Breathing Apparatus

Self-Contained Oxygen Breathing Apparatus (sometimes called "helmets" or "rescue apparatus") is a device that enables a man to work in an atmosphere devoid of oxygen.

The Cover is Removed, Showing the Construction of the Gibbs

The Gibbs is an apparatus that provides a constant supply of oxygen to replace the oxygen consumed in sustaining life. It also carries an absorber to render harmless the carbon-dioxide exhaled from the lungs.

For fire fighting and rescue work the Gibbs is indispensable. It enables the wearer to breathe in comfort and safety in any atmosphere. The oxygen is supplied automatically, and whether the man is under violent exertion or at complete rest just the proper amount is supplied to meet the needs of the moment.

The Gibbs Apparatus has been approved by the U. S. Bureau of Mines, and is in use in their Rescue Cars and Stations. It has been adopted by the big coal and metal mines—in all, more than 1200 Gibbs Apparatus have been installed.

McCaa Oxygen Breathing Apparatus—Half Hour Type

McCaa Oxygen Breathing Apparatus—Half Hour Type

Gives complete protection in irrespirable air. Operation is entirely independent of outside air, having with it a supply of oxygen in a cylinder, a refillable cartridge regenerator for absorbing the carbon monoxide exhaled by the wearer, supplies oxygen automatically in exactly the quantity required, whether under violent exertion or complete rest.

Fully charged apparatus lasts full half hour at great exertion, and over one hour at rest or moderate work.

Bulletin on request.

Burrell All Service Gas Mask

Will protect for two hours against carbon monoxide (the poisonous constituent of "after-damp") or any other poisonous gas, smoke or fume in any atmosphere in which the flame safety lamp will burn.

Burrell All Service Gas Mask

Mask is easy to adjust and comfortable to wear. It weighs only 5½ pounds. Permits natural breathing, talking, hearing and vision. The canister is provided with chemical for absorbing or rendering harmless all poisonous gases, smoke or fumes, and converting carbon monoxide into less harmful carbon dioxide. Suitable chemicals and filters are provided for the removal of other noxious gases and smoke. When a canister becomes exhausted, it is easily replaced with a new one.

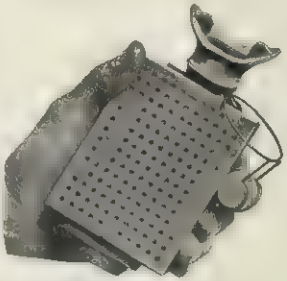
With the Burrell, you work fast, get up close, and load out a mine fire.

Used by the most prominent mining companies everywhere.

M-S-A Self-Rescuer

WITH THIS A MINER CAN RESCUE HIMSELF.

In the event of a mine fire or explosion, the Self-Rescuer will permit the miner to escape through "afterdamp" to the surface in safety.



The carbon monoxide contained in "afterdamp" is responsible for over 50% of the fatalities caused by mine explosions and fires. The installation of Self-Rescuers in your mine may be the means of saving many lives.

It is supplied in a hermetically sealed container carried on the belt. A vigorous pull on "D" Ring opens the container and the Self-Rescuer is easily removed. Weight as shown, 13 ounces. Weight in case, 20 ounces.

Let the miner rescue himself!

Write for plan of installation.

Miners' Individual Shot Firing Battery

In general use where shots are fired by individual miners. Three-Cell (3.6 volts) flashlight battery. Carried in all tin, non-rusting case, fitted with safety spring contacts and belt clip.

Two safety contacts require strong pressure to close circuit for firing. No possible means of making permanent connection or firing by accident. Price complete, $1.25.

"Permissible" Shot-Firing Attachment to the Edison Mine Lamp Battery

A Safe, Reliable and Durable Device.
Uses the M-8 Standard Mine Lamp Battery.

Fires several thousand shots on one battery charge.

More reliable, durable, cheaper and lighter than any magneto-type battery. Approved for safety by Bureau of Mines.

Weight complete 53 oz., without battery 10 oz.

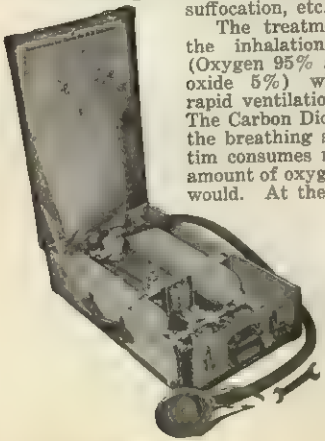
Attachment with Key .....$ 5.00
Attachment with Key with Battery..... 14.50

The Pyrotannic Detector

For the rapid determination of carbon monoxide in the blood. An unfailing diagnosis of carbon monoxide poisoning in a very few minutes. Very simple manipulation. Literature. Price, $25.00.

The H-H Inhalator

For treating victims of gas asphyxiation, smoke suffocation, etc.



The treatment consists of the inhalation of Carbogen (Oxygen 95% and Carbon Dioxide 5%) which causes a rapid ventilation of the lungs. The Carbon Dioxide stimulates the breathing so that the victim consumes many times the amount of oxygen he otherwise would. At the same time the large volume of oxygen breathed displaces any poisonous gas present in the victim's lungs or blood.

Approved by American Gas Ass'n.

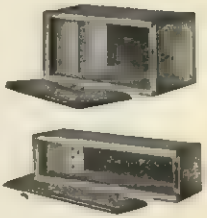
Price $160.00.

Shot Firers All Leather Carrying Case for Detonators

Heavy leather waterproof case, fitted with shoulder carrying strap and staple with lock. Each detonator with lead wires in separate compartment of special removable canvas belt carried inside. Capacity 50 or 75 detonators with 6 ft. or 8 ft. lead wires.

Prices, (50) $12.00 ea.
(75) 13.00 ea.

Shot Firers All Wood Detonator Carriers



Each detonator is carried in separate compartments as required by insurance standards. Boxes are fitted with slide covers and are free from exposed nails inside.

Upper—Capacity 50 detonators with lead wires. Price, 37c ea.

Lower—Capacity confined to legal limit of 5 detonators per day. Price, 60c each.

M-S-A Carbon Monoxide Detector

Shows the slightest traces of carbon monoxide in the air. An invaluable device for Rescue Teams

and Mine Fire Crews. The scale is calibrated from .05% to 1%.

Write for bulletin and complete information.

Price, $30.00.

The Burrell Gas Indicator

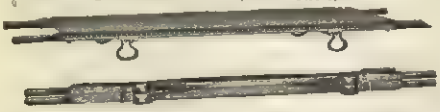
Gives an immediate quantitative test for methane and other explosive gases at the point where the gas exists. No need for long delays by taking air samples to a laboratory or chemist. Detailed bulletin on request. Price, without battery, $40.00; with battery, $49.00.

Mining Machine Bit Boxes

Prevents loss of bits and boxes. Keeps bits and boxes out of coal crushers. Handle locks the lid in place. Made of 12 gauge steel, lap riveted. Furnished in two sizes, for 65 bits and 120 bits. Prices —No 1, $2.40; No. 2, $3.00.

U. S. Army Stretchers

Used the world over. It is the most improved pattern as adopted by the Medical Department of the U. S. Army. It is light, compact and strong. Length 7 ft. 6 in. Width when opened, 22 inches. Weight 22 pounds. Price $6.00 each.



Homestake Stretcher

Adapted for conveying the patient through shafts, pitches, stair and ladder ways, etc., from one level to another. Consists of sound board bed, adjustable foot support, strong pipe handles for carrying and four heavy straps to hold patient securely. The Stokes and other well known stretchers carried in stock.

Price, $36.00 each.

M-S-A Pocket Packet No. 2

For treating minor injuries. Contents include iodine, ampoule, ammonia inhalent, picric gauze, 1-inch and 3-inch roller bandages, ¼-inch and 3-inch bandage compresses and an accident report card. The metal container is 4 inches by 2½ inches by ⅞-inch. Price, $6.60 doz.

Packets can be furnished with company's design or insignia and in various colors.

M-S-A Emergency Hospital Equipment

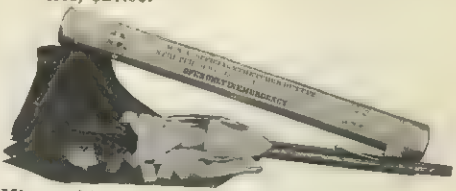
Especially designed for mine use and conforms with compensation insurance requirements.

M-S-A Hospital Line includes triangular bandages, compress bandages, and burn dressings especially designed for rapid application.

M-S-A Stretcher Outfit

Equipped complete with every essential to give first aid in any emergency. The outfit consists of a Stretcher, Double Wool Blanket, Rubber Blanket, Splints, 4 First Aid Packets, 4 Triangular Bandages and 4 Muslin Rolls. Packed in a substantial galvanized canister, dust and moisture proof.

Price, $27.00.

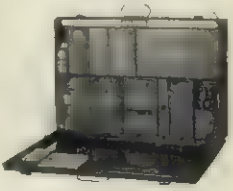


Miners' First Aid Cabinet

Contents recommended by U. S. Bureau of Mines for first aid treatment. A separate, plainly labeled carton, open at the rear, is provided for each accessory. The dressings are easily seen—easily removed — quickly applied. The lowered lid forms a convenient table for laying out dressings or taking inventory.

Send for bulletin.

Price, $15.00.



M-S-A Contest Outfit

Designed for facilitating transportation and preventing loss of necessary equipment for First Aid Meets, General Practice, etc. Includes U. S. Army Stretcher, 2 pieces canvas 6 ft. by 8 ft., double wool blanket, 6 pkgs. picric gauze, aromatic spirits ammonia, horn teaspoon, aluminum drinking cups, metal box for dressings, set of 17 splints, scissors, 2 tourniquets, 24 cravat triangular bandages, 12 large, 12 medium, 12 small bandage compresses, 6 first aid packets, pipe for improvised stretcher. All neatly packed in strong steel box. Price $65.00.

New Miners' Leather Belt

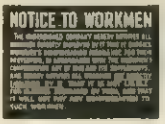
The new 3-inch belt is designed to carry the Edison Mine Lamp battery without sagging and discomfort. The belt is equipped with a short leather carrying strap which fastens around the battery. The belt is made of the best selected harness leather. Price, $13.00 doz.

Miners' Caps

Cap is made of heavy white duck, the vizor of sole leather and the lamp holder of firm substantial leather, provided with metal clip to accommodate Edison Lamp head piece. A leather tab on the rear of the cap secures the lamp cable to the cap. Price, $4.35 doz.

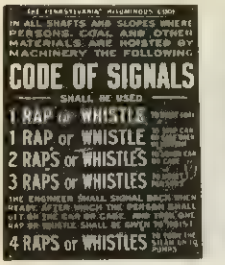
M-S-A Stock Signs

M-S-A Stock Signs are made of 18 gauge steel and finished in porcelain enamel. Enameled signs with special wordings and in various color combinations can also be furnished. Substantial savings may be effected by choosing STOCK SIZES for your special signs. Signs are punched and grommet rings inserted for mounting.

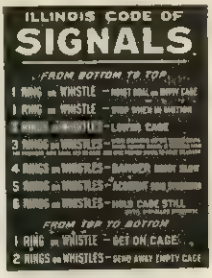


10" x 14" Porcelain Enameled. White letters on black ground

E-71. 7"x10". E-1014—10"x14". E-1420. 10"x20". Enameled. White letters on red ground.


IN ALL SHAFTS AND SLOPES WHERE PERSONS, COAL AND OTHER MATERIALS ARE HOISTED BY MACHINERY THE FOLLOWING
CODE OF SIGNALS
SHALL BE USED
1 RAP or WHISTLE
1 RAP or WHISTLE
2 RAPS or WHISTLES
3 RAPS or WHISTLES
4 RAPS or WHISTLES

No. 010—Pennsylvania Bituminous Code. Also used in W. Va. and Kentucky. 18 gauge 14"x20" and 18"x24" Enameled.


ILLINOIS CODE OF
SIGNALS
FROM BOTTOM TO TOP
FROM TOP TO BOTTOM
1 RING on WHISTLE — GET ON CAGE
2 RINGS on WHISTLES — SEND AWAY EMPTY CAGE

No. 1106—Illinois Code, 18 gauge 16"x24" Enameled

Many states have standard hoisting signal codes. We carry some of them in stock and make up special code signs to order.

201

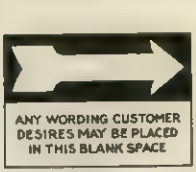
206A

218

225

The "Danger" series including a large variety of different wordings can be furnished in three sizes, 7"x14", 10"x14" 14"x20". "Danger" is white in red oval on black ground. Bottom wording is black on white ground

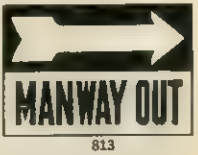
4"x24" Porcelain Enameled Panel Signs. White letters on blue ground. Special wordings upon request.



805

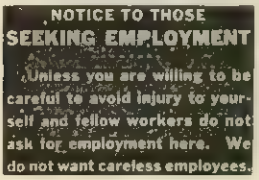
801

811



813

Direction signs 6½"x14" Lithographed or 10"x14" porcelain enameled. Use them freely to designate manways, airways etc.


NOTICE TO THOSE SEEKING EMPLOYMENT
Unless you are willing to be careful to avoid injury to yourself and fellow workers do not ask for employment here. We do not want careless employees.

No. 987. 20"x28"—18 gauge porcelain enameled steel

No. 011. Standard Danger Signs—10"x24" 26 gauge steel Lithographed

DANGER
NO TRESPASSING PRIVATE PROPERTY
TRESPASSING ON THIS PROPERTY FORBIDDEN UNDER THE PENALTIES PROVIDED IN AN ACT DATED APRIL 14, 1905, P.L. 169

No. 77—14"x20" Legal Sign.

Griffin Mill No. 24

This mill has been designed especially for fine pulverizing of various materials at a rate of from ½ to 1 ton per hour, and to produce a finished product of a fineness varying from 50 to 70% through a 200 mesh screen.

The Griffin Mill is a self-contained machine and needs no auxiliaries such as fans, blowers, separators or collectors and external piping. It takes a feed of ¾" material and smaller and pulverizes it to finished dust in one operation so that all material leaving the pulverizer is finished material.

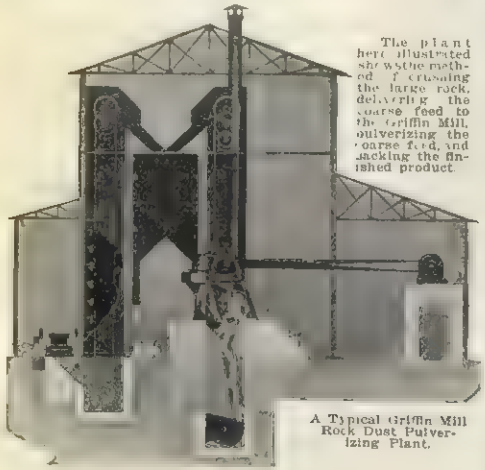
It is simple, strong, durable and accessible. The cost of renewals is low and the task of renewing worn or damaged parts is easy.

Griffin Mill Characteristics

Large output of extremely fine ground material.
Low horse-power consumption.
Low maintenance cost.
Simplicity of construction and ease of operation.
Dustless operation.
No bearings in grinding chamber.
Fewer parts exposed to wear, all wearing parts operating in a bath of oil, giving maximum life.

Specifications for the Griffin Mill No. 24

Extreme height of Mill above foundation	6'5⅝"
Dimensions of base	5'0" x 5'0"
Weight of Mill	700 lbs.
Diameter and width of pulley	26" x 10"
Speed of Pulley	230 R.P.M.
Rotation of Pulley	Counter-clockwise
Height of Pulley center above foundation	4'6⅜"
Dia. of crushing ring or die	24"
Dia. of roll	16"
Height of feeder table above foundation	3'8⅜"
Height of feeder inlet spout above foundation	4'10¼"



A Typical Griffin Mill Rock Dust Pulverizing Plant.

The plant here illustrated shows the method of crushing the large rock, delivering the coarse feed to the Griffin Mill, pulverizing the coarse feed, and packing the finished product.

List of Equipment for Crushing and Pulverizing Plant

Crusher.
5 H. P. 220 or 440 volt motor, with base pulley and starter.
4" Belt for Crusher.
Griffin Mill, No. 24.
15 H.P. motor for Griffin Mill (900 R.P.M.) 7" Driving Pulley.
3" Belt for Griffin Mill.
2 sheet metal spouts—to bins.
Draft Stack.

Elevator Equipment—Consists of:
One bucket Elevator 22'9" centers.
One bucket Elevator 25'6" centers.
(Totally enclosed in No. 16 ga. casing).
Two 3 H. P. motors to operate elevators.

M-S-A Rock Dust Distributor

Will distribute the rock dust efficiently and uniformly over the ribs and roof so that tests will show a uniform amount of incombustible material in all samples taken from any section of the dusted area.

The dust is distributed by means of a nozzle that is easily swung in all directions by the operator. For dusting side entries and airways, an extension may be added to the outlet pipe.

The Distributor and locomotive with two men to operate will lay from 6,000 to 8,000 feet of entry per shift of 8 hours.

The track gauge of the Standard Distributor is 42 inches, and the height 51 inches, though the dimensions can be varied to suit the width of entry or height of seam. The Standard car will hold about three tons of rock dust.

Motor box cover lifted to show 5 H. P. motor with sprockets and chain drives, one to blower and one to feeder gears. Enclosed motor. Voltage as required

The M-S-A Rock Dust Distributor has been tried in the actual rock-dusting of mines and has proved thoroughly efficient and economical.

Estimates will be furnished promptly on Distributors designed to fit special conditions. Inquiries and orders should give track gauge, height of seam, voltage for operating motors and distance of drawbar above rail.

M-S-A Rock Dust Testing Kit

An indispensable outfit for determining the coal dust hazard both before and after rock-dusting.

This outfit is so designed that the average mining man will be able to make rapid and accurate tests on the amount of incombustible matter in coal-rock dust mixtures.

Adding too little rock dust to the coal dust is hazardous, adding too much would be wasteful. This Testing Kit, therefore, is not only a necessary safety factor in your rock-dusting work, but an economic one as well.

2170

TUDOR PLATE

BARONET PATTERN

Bright Finish—20 Year Guarantee.

This beautiful pattern brot out by the Community people is designed to give the consumer a real high class product at a low price. Thick overall plating. Special sectional plating at the wearing points. All correct service pieces fastened with ribbon in beautifully designed gift boxes lined with blue, making wonderful counter and window displays. Each fancy piece sealed in special imported anti-tarnish moisture proof transparent paper.

HOLLOW HANDLE KNIVES

No. 39611—Medium or table knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅞ pounds. Length, 9¾ inches. Per dozen.....$16 50

No. 39664—Medium or table knife, stainless, packed one-half dozen in a racked box. Weight, per dozen, 1⅞ pounds. Length, 9¾ inches. Per dozen..... 18.50

No. 39612—Dessert or luncheon knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅛ pounds. Length, 8¾ inches. Per dozen..... 16.00

EMBOSSED HANDLED KNIVES

No. 39615—Medium or table knife, packed one-half dozen in a racked box. Weght, per dozen, 1 7-16 pounds. Length, 9½ inches. Per dozen.....$7.50

No. 39616—Dessert or luncheon knife, packed one-half dozen in a racked box. Weight, per dozen, 1⅞ pounds. Length, 8½ inches. Per dozen..... 7.30

EMBOSSED HANDLED FRUIT KNIVES

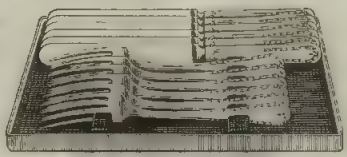
No. 39698—Fruit knife, packed one-half dozen in a racked box. Weight, per dozen, 11 ounces. Length, 6½ inches. Per dozen.....$6.00

FORKS

No. 39607—Medium flat fork, packed one dozen in a plain box. Weight, 1¾ pounds. Length, 7½ inches. Per dozen $6.00

No. 39606—Dessert flat fork, packed one dozen in a plain box. Weight, 1⅞ pounds. Length, 7 inches. Per dozen 5.50

KNIFE AND FORK SETS



No. 39742—Medium hollow handle knife and flat fork set. Packed one set in a racked box. Weight, per set, 2 pounds, 14 ounces. Per set.....$11.25

No. 39598—Medium hollow handle knife and flat fork set, (stainless). Packed one set in a racked box. Weight, per set, 2 pounds, 14 ounces. Per set..... 12.25

No. 39743—Dessert hollow handle knife and flat fork. Packed one set in a racked box. Weight, per set, 2 pounds, 8 ounces. Per set..... 10.75

No. 39803—Medium or table embossed handle knife and flat fork set. Packed one set in a racked box. Weight, 2 pounds, 9 ounces. Per set..... 6.75

No. 39804—Dessert embossed handle knife and flat fork set. Packed one set in a racked box. Weight, 2 pounds, 6 ounces. Per set..... 6.40

SPOONS

No. 39602—Teaspoons, packed one dozen in a plain box. Weight, 13 ounces. Length, 6 inches. Per dozen..$3.00

No. 39603—Dessert spoons, packed one dozen in a plain box. Weight, 1⅞ pounds. Length, 7⅛ inches. Per dozen 5.50

No. 39605—Table spoons, packed one dozen in a plain box. Weight, 1¾ pounds. Length, 8⅛ inches. Per dozen 6.00

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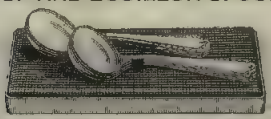
SOUP AND BOUILLON SPOONS



No. 39604 Round bowl soup spoons, packed one dozen in a plain box. Weight, 1¼ pounds. Length, 7⅛ inches. Per dozen.....$6.00

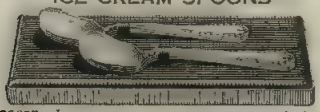
No. 39622—Bouillon or consomme spoons, packed six in a lined gift box. Weight, 10 ounces. Length, 4⅞ inches. Per dozen $6.00

COFFEE SPOONS

No. 39625—A. D. Coffee spoons, packed six in a lined gift box. Weight, 6 ounces. Length, 4½ inches. Per dozen $3.50

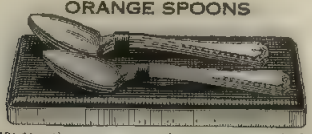
No. 39601—Sherbet or 5 o'clock teaspoons, packed six in a lined gift box. Weight, ¾ pound. Length, 5⅛ inches. Per dozen..... 3.50

ICE CREAM SPOONS



No. 39657 Ice cream or sundae spoons, packed six in a lined gift box. Weight, 10 ounces. Length, 5½ inches. Per dozen $5.50

ORANGE SPOONS



No. 39641—Orange or grapefruit spoons, packed six in a lined gift box. Weight, 10 ounces. Length, 5⅝ inches. Per dozen.....$5.50

ICED TEA SPOONS

No. 39649—Iced tea or iced drink spoons, packed six in a lined gift box Weight, 10 ounces. Length, 7½ inches. Per dozen $6.00

SUGAR SPOONS

No. 39650—Sugar spoon, packed one in a lined gift box. Weight, 4 ounces. Length, 5 ⅝inches. Per dozen $8.40

BUTTER KNIVES

No. 39655—Butter knife, packed one in a lined gift box. Weight, 4 ounces. Length, 7½ inches. Per dozen.$8.40

JAM OR CONSERVE SPOONS

No. 39483 Jam or conserve spoons, packed one in a lined gift box. Weight, 6 ounces. Length, 5½ inches. Per dozen $7.20

BERRY OR SERVING SPOONS

No. 39620—Berry or serving spoon, packed one in a lined gift box. Weight, 10 ounces. Length 8⅛ inches. Per dozen $21.00

2172

TUDOR PLATE

BARONET PATTERN

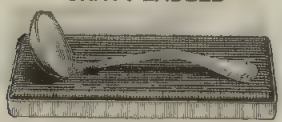
Bright Finish—20 Year Guarantee.

This beautiful pattern brot out by the Community people is designed to give the consumer a real high class product at a low price Thick overall plating. Special sectional plating at the wearing points. All correct service pieces fastened with ribbon in beautifully designed gift boxes lined with blue, making wonderful counter and window displays. Each fancy piece sealed in special imported anti-tarnish moisture proof transparent paper

CREAM LADLES

No. 39715—Salad dressing or cream ladles, packed one in a lined gift box. Weight, — ounces. Length, 5¾ inches. Per dozen.....$12.00

GRAVY LADLES

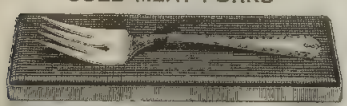


No. 39717—Serving or gravy ladle, packed one in a lined gift box. Weight, — ounces. Length, 6¾ inches. Per dozen $18.00

SOUP LADLES

No. 39721—Medium soup or serving ladle, packed one in a lined gift box. Weight, 14 ounces. Length, 10⅝ inches. Per dozen.....$42.00

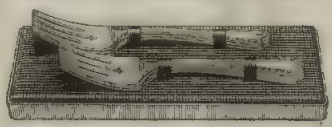
COLD MEAT FORKS



No. 39667—Cold meat or serving fork, packed one in a lined gift box. Weight, 6 ounces. Length, 8⅝ inches. Per dozen $15.00

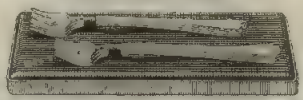
No. 39668—Small cold meat fork, packed one in a lined gift box. Weight, 4 ounces. Length, 6⅛ inches. Per dozen 10.20

INDIVIDUAL SALAD FORKS



No. 39688—Individual salad or pastry fork, packed six in a lined gift box. Weight, 12 ounces. Length, 6⅛ inches. Per dozen.....$8.50

OYSTER FORKS



No. 39679—Oyster or sea food fork, packed six in a lined gift box. Weight, 9 ounces. Length, 6⅛ inches. Per dozen $5.50

BUTTER KNIFE AND SUGAR SPOON

No. 39729—Butter knife and sugar spoon set, packed one set in a lined gift box. Weight, 7 ounces. Per set $1 40

BUTTER SPREADERS

No. 39697—Individual butter spreader, packed six in a lined gift box. Weight, 15 ounces. Length, 6¼ inches. Per dozen $7.50

TUDOR PLATE

BARONET PATTERN

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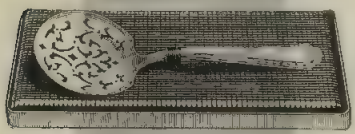
PICKLE FORKS

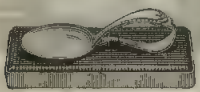
No. 39682—Pickle or olive fork, packed one in a lined gift box. Weight, 3 ounces. Length, 6⅝ inches. Per dozen $12.00

PIERCED SERVERS



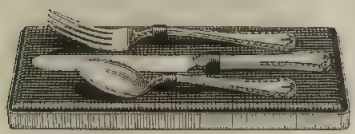
No. 39690—Pierced server, packed one in a lined gift box. Weight, 5 ounces. Length, 7⅝ inches. Per dozen $21.00

BABY SPOONS



No. 39619—Baby spoon, (bent handle) packed one in a lined gift box. Weight, 2 ounces. Length, 2½ inches. Per dozen $6.00

THREE PIECE CHILD SETS



No. 39737—Child's set, (flat handles) packed one set in a lined gift box. Weight, per set, 7 ounces. Length of knife, 7¼ inches. Per set.....$1.75

CARVING SETS

No. 39728—2 piece— Steak or game carvers, hollow handle; packed one pair in a lined gift box. Weight, 11 ounces. Length of knife, 10 inches. Per pair....$7 00

BUFFET SETS

26-Piece.

A staple set for any home. Striking display feature. The best wedding present. Sold for price for silver alone—chest free. Handy for table setting. Slips easily into sideboard drawer. Not an assortment but a standard 26-piece container.

No. 39585—Embossed handle medium knives. Weight, per set, 5 pounds. Per set.....$12.75

No. 39500—Embossed handle dessert knives. Weight, per set, 5 pounds. Per set..... 12.50

No. 39584—Hollow handle medium knives. Weight, per set, 5 pounds. Per set..... 17 25

No. 39578—Hollow handle dessert knives. Weight, per set, 5 pounds. Per set..... 16.75

JANNEY, SEMPLE, HILL & Co.

2174

TUDOR PLATE

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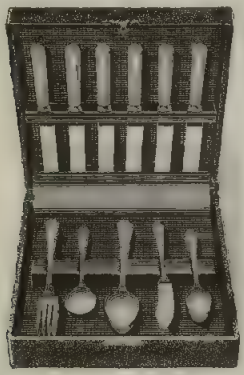
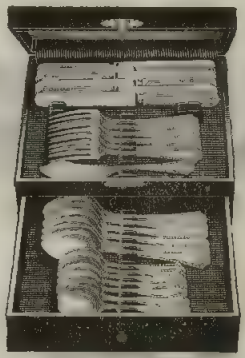
CHESTS

26-piece chest—Consists of 6 teaspoons, 6 table or dessert spoon, 6 knives, 6 forks, 1 butter knife, 1 sugar spoon.





No. 391002—Embossed medium knives and flat handle medium forks. Weight, per set, (including chest) 7 pounds. Per set.....$14.50

No. 391000—Hollow handle medium knives and flat handle medium forks. Weight, per set, (including chest) 7 pounds. Per set.....$18.75

No. 475-B—Empty grain leatherette blue lined flat chest. Each $1.75

No. 39930—Embossed medium knives and flat handle medium forks. Weight, per set, (including chest) 8½ pounds. Per set.....$14.50

No. 39928—Hollow handle medium knives and flat handle forks. Weight, per set, (including chest) 8½ lbs. Per set $18.75

No. 464-B—Empty mahogany finished chest with drawer. Each $1.75

No. 39860—Embossed medium knives and flat handle medium forks. Weight, per set, (including chest) 8½ pounds. Per set.....$14.50

No. 39859—Hollow handle medium knives and flat handle medium forks. Weight, per set, (including chest) 8½ pounds. Per set.....$18.75

No. 465-B—Empty oak finished chest with drawer. Each $1.75

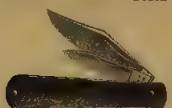
Above sets with Dessert size Knives and Forks if desired.

Dessert Knife and Fork price instead of Medium size prices.

UNIVERSAL POCKET KNIVES

No. 81104—3¼-inch ebony handle, large spear blades, iron lined, iron bolster. Dozen $5.00

No. 81410—3¼-inch ebony handle, large spey, iron lined, iron bolster. Dozen $6.00



No. 1204½—3-inch gunmetal handle, large clip and pen..... Dozen $5 00

No. 32650—3⅜-in. scored ebony handle, large spear and pen, iron lined, steel bolster ..... Dozen $6.00

No. 22104C—3⅜ inch black fiber handle, large spear and pen, iron lined, iron bolster, with chain..... Dozen $10 00

No. 02266½—Boy Scout. 3¼-inch perfected stag handle, easy opener, large sheep foot and pen, brass lined, nickel silver bolster, with shakcle. ..... Dozen $12.00

One-half dozen in a box.

No. 32650¾—3⅜-inch scored ebony handle, large clip and pen, iron lined, steel bolster..... Dozen $6.50

No. 02104¾—3⅜-inch perfected stag handle, large clip and pen, glazed, iron lined, iron bolster..Dozen, $12.00

No. 22104¾—3⅜-in. cocobola handle. ..... Per dozen, $12.00

No. 02104½—3⅜-inch perfected stag handle, large sheep foot and pen, iron lined, iron bolster. Per dozen, $12.00

No. 0245—3⅜-in. perfected stag handle, large spear and pen, iron lined, iron bolster. Per dozen, $12.00

No. 2245¾—3⅜-inch cocobola handle Large clip and pen, glazed, iron lined, iron bolster ..... Per dozen, $12 00

No. 22125—3½-inch cocobola handle, large spear and pen, brass lined. Per dozen, $16.00

No. 52125—3½-in. ivoroy handle. Per dozen, $18.00

No. 42125—3½-in. buffalo ivoroy handle ..... Per dozen, $18.00

No. 02125—3½-in. perfected stag handle ..... Per dozen, $16.00

One-half dozen in a box

No. 02125¾—3½-in. perfected stag handle, large clip and pen, brass lined, iron bolster ..... Dozen $9 50

No. 2182—4-inch cocobolo handle, pruning blade, iron lined, iron bolster. Dozen $11 50

No. 02640—3¼-inch perfected stag handle, large spear and pen, brass lined, iron bolster and caps....Dozen $12.00

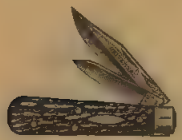
No. 8246G—3⅜-inch green celluloid handle, large spear and pen, half polished, brass lined, nickel silver bolster..... Dozen $13.00

No. 8246Y 3⅜-in yellow celluloid handle, otherwise same as No. 8246G. Dozen $ ...

No. 22380¾—3⅜ inch cocobolo handle, large clip and pen, fine glazed finish, brass lined, iron bolsters..Doz. $13.00

One-half dozen in a box.

UNIVERSAL POCKET KNIVES

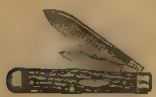


No. 02125¾ — 3⅛-inch cocobola handle, clip and pen, brass lined.
Per dozen, $16.00

No. 02125⅝ — 3⅛-inch perfected stag handle, large saber clip and pen
Per dozen, $17 00

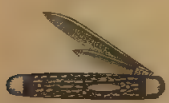
No. 02236—3⅛-in. perfected stag handle, large spear and pen, half polished, brass lined, German silver bolster, easy opener.... Per dozen, $22.00

No. 82267—3⅛-in. ivoroy handle.
Per dozen, $23.00



No. 0251—3-in perfected stag handle, large spear and pen, half polished, brass lined, German silver bolster, cap and shield ..... .Per dozen, $22.00

No. 4251 — 3-in. buffalo ivoroy handle
Per dozen, $22 00



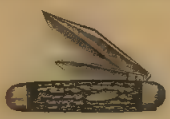
No. 82232—3¼-in. ebony handle, large spear and pen, half polished, brass lined, German silver bolster, cap and shield ....Per dozen, $23.00

No. 82222—3¼-in. smoked pearl handle .. .. Per dozen, $23 00

No. 42205—3-in. buffalo ivoroy handle, large spear and pen, half polished, brass lined, German silver bolster, cap and shield. .....Per dozen, $22.00

No. 02205—3-in. perfected stag handle.
Per dozen, $21.00

One-half dozen in a box.



No. 02154⅝ — 3¼-inch perfected stag handle, large saber clip and pen, brass lined, German silver bolsters and caps.....Per dozen, $22.00

No. 0247⅝ — 3⅜-inch perfected stag handle, large clip and pen, brass lined, iron bolster and cap.
.. .. .Per dozen, $26.00

No. 2247⅜—3¼ in. cocobola handle.
Per dozen, $20 00

No. 82623 3-in. tortoise ivoroy handle, large spear and pen, half polished, brass lined, German silver bolster, cap and shield Per dozen, $22 00

No. 02239¾ — 3⅜-inch perfected stag handle.. ..... . Per dozen, $23.00

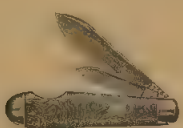
No. 0274—3⅛-in perfected stag handle, large spear and pen, brass lined, iron bolster and cap .. Per doz., $22.00

One-half dozen in a box.

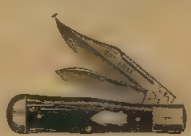
No. 02102—3⅝-in perfected stag handle, large spear and pen, half polished, brass lined, German silver bolster, cap and shield..Per dozen, $24 00

No. 0004 — 3⅝-in. perfected stag handle, large spear and punch, brass lined. ..... Per dozen, $24.00

No. 02271¾—4-in. perfected stag handle, large clip and pen, brass lined ..... Per dozen, $30 00



No. 82100R—3⅜-inch red celluloid handle, large spear and pen, fine glazed finish, brass lined, iron bolster.
Dozen $13 00



No. 0263⅝ — 3¾-inch perfected stag handle, large sabre clip and pen, brass lined, German silver bolster and cap
Per dozen, $33.00

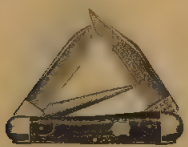
No. 4263⅝—3¾-in. buffalo ivoroy handle .....Per dozen, $30 00

One-half dozen in a box

UNIVERSAL POCKET KNIVES

No. 0263—3⅞-inch perfected stag handle, large spear and pen, brass lined. ....Per dozen, $27.00

No. 02637½ — 3¾-inch perfected stag handle, large clip and pen, brass lined. ....Per dozen, $27.00



No. 00736—3¾ in perfected stag handle, large clip, large spey and punch, brass lined, German silver bolster and cap .... Per dozen, $42.00

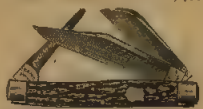
No. 50216½—3⅝-in. white ivory handle, large spear, spey and punch, half polished, brass lined, German silver bolster and shield Per dozen, $39.00

No. 00216½ — 3¾-inch perfected stag handle.... Per dozen, $36.00

No. 03154—3½ inch perfected stag handle, large clip, spey and pen, half polished, brass lined, nickel silver bolsters.... ....Dozen $18.00

One half dozen in a box

No. 00480—3⅞-in. perfected stag handle, large clip, large spey and punch, half polished, brass lined. Per dozen, $38.00



No. 00443—4-in. perfected stag handle, large clip, sheep foot and punch, brass lined, German silver bolsters ....Per dozen, $37.00

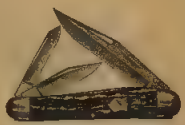
No. 0333—3¾-in perfected stag handle, large spear and two pens, brass lined, German silver bolsters and shield ....Per dozen, $36.00

No. 03618—3¾-in. perfected stag handle, large clip, sheep foot and spey, brass lined, German silver bolster and shield....Per dozen, $36.00

No. 08780—3½-inch perfected stag handle, large spear, large spey and pen, half polished, brass lined, iron bolsters.... ....Dozen $21.00

No. 83480—3⅞-in. smoked pearl handle, large clip, sheep foot and spey, brass lined, German silver bolsters and shield Per dozen, $40.00

One-half dozen in a box



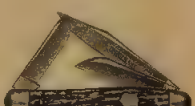
No. 08670—3¾-in. perfected stag handle, large sabre clip, small clip and pen, half polished, German silver bolster, cap and shield, brass lined. .Per dozen, $42.00

No. 48670—3¾-in. buffalo handle .Per dozen, $42.00

No. 03480½ - 3¾-inch perfected stag handle, large slim spey, sheep foot and clip, German silver bolsters, brass lined .... Per dozen, $38.00

No. 48648 — 4-in. buffalo ivoroy celluloid handle, large clip, sheep foot and spey, German silver bolsters, brass lined.... Per dozen, $38.00

No. 08648 — 4-inch perfected stag handle .... Per dozen, $37.00

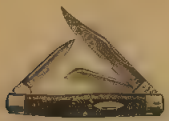


No. 08480—3¾-inch perfected stag handle, large clip, sheep foot and spey, half polished, brass lined, nickel silver bolsters....Dozen $21.00

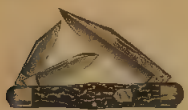
No. 80645—3½-in. ebony handle, large spear, pen and punch, brass lined, German silver bolsters and shield. Per dozen, $37.00

One-half dozen in a box.

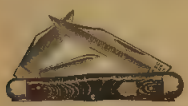
UNIVERSAL POCKET KNIVES



No. 83635G — 3½-inch green celluloid handle, large clip, sheep foot and pen, half polished, brass lined, nickel silver bolsters . . Dozen $21.50



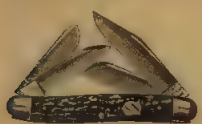
No. 03404¾ 3⅝-in perfected stag handle, large saber clip, clip pen and spear pen, half polished, brass lined, nickel silver bolsters. Dozen $23 50



No. 43404¾—3⅝-in. buffalo ivory handle, large saber clip, clip pen and spear pen, half polished, brass linned, nickel silver bolsters. Dozen $24.00

No. 8308R—3⅝-in. red celluloid handle, large clip, spey and pen, half polished, brass lined, nickel silver bolsters ....Dozen $23 00

No. 8308G—3⅝-inch green celluloid handle, otherwise same as No 8308R . . Dozen $23.00



No. 04480—3⅝-inch perfected stag handle, large clip, sheep foot, spey and pen, half polished, brass linned, nickel silver bolsters.....Dozen $23.50

One-half dozen in a box.

No. 08216—3¾-in. perfected stag handle, large spear, large spey and clip, brass lined. German silver bolsters and shield.....Per dozen, $36.00

No. 43191—3¾-in. buffalo ivoroy handle, large spear and two pens, half polished, brass lined, German silver bolsters and shield..Per dozen, $33.00

No. 08862—3¾-in. perfected stag handle, Boy Scout knife, large spear, punch, can opener and screw driver, brass lined, half polished ..... Per dozen, $40 00

No. 08186¾ — 3¾-inch perfected stag handle, flat pattern, large sabre clip, pen and file, half polished, German silver bolsters, brass lined. .....Per dozen, $33.00

No. 8288 — 3⅝-in. smoked pearl handle, large spear, pen and file, half polished, brass lined, German silver bolsters and shield..Per dozen, $33.00

One-half dozen in a box.

No. 08838¾—3½-in. perfected stag handle, large clip, sheep foot and spey, half polished, brass lined, nickel silver bolsters. . . Dozen $19 50

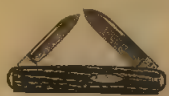
No. 04246 3½ inch perfected stag handle, large spear and pen, bottle opener and corkscrew, half polished, brass lined, nickel silver bolsters. ..... Dozen $52 00

No. 02200—3½-in. perfected stag handle, large spear and pen, brass lined, German silver bolsters and shield. .....Per dozen, $24.00

No. 4265¾—3¾-in. buffalo ivoroy handle, large clip and pen, brass lined, German silver bolsters .....Per dozen, $26 00

No. 4261 — 3-inch buffalo ivory handle large spear and pen, brass lined. Per dozen, $23 00

No. 0264—3-in. perfected stag handle. ..... Per dozen, $24 00



No. 02103—2¾-in. perfected stag handle, large spear and pen, German silver tips, brass lined Per dozen, $23.00

One-half dozen in a box.

UNIVERSAL POCKET KNIVES

No. 02309 — 3-in. perfected stag handle, large spear and pen, brass lined. Per dozen, $22 00

No. 03425—3-in. perfected stag handle, large spear, pen and nail file, brass lined, German silver tips Doz., $30.00

No. 03337—3-in. perfected stag handle, large spear and two pens, brass lined. Per dozen, $30 00

No. 03276—3¼-in. perfected stag handle, large spear, pen and nail file, half polished, brass lined, German silver tips and shield . .Per dozen, $32.00

No. 03144 — 3¼-in perfected stag handle, large spear, pen and nail file, half polished, brass lined, German silver bolsters and shield. Per dozen, $33 00

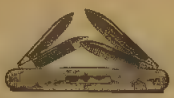
No. 03327 3¼-in. perfected stag handle, large spear, pen and nail, full polished, German silver lined, tips and shield knurled. .. ....Per dozen, $48 00

No. 7290—2¾-in. pearl, large spear and pen, brass lined, German silver bolster and cap .....Per dozen, $33.00

One-half dozen in a box.

No. 72205—3-in. pearl, large spear and pen, brass lined.....Per dozen, $45.00

No. 7837—3-in. flat pearl handle, brass lined, German silver bolsters. Per dozen, $52.00



No. 74213 — 3¼-inch pearl handle, full polished, German silver lined, knurled..... .....Per dozen, $78 00

No. 7361 — 3-inch pearl handle, brass lined, German silver bolsters. Per dozen, $48 00

No. 72144—3¼-in. pearl handle, brass lined, German silver bolsters. .. .. Per dozen, $60.00

No. 7292—2¾-inch pearl handle, brass lined, German silver bolster. Per dozen, $30 00

No. 72309 — 3-inch pearl handle, brass lined . ... Per dozen, $42 00

No. 73337 — 3-inch pearl handle, brass lined .... Per dozen, $48.00

One-half dozen in a box.

No. 73149—3-in. pearl handle, half polished, brass lined.....Per dozen, $54.00

No. 73336—3-inch pearl handle, brass lined, German silver tips Doz., $54.00

No. 73083—3¼-in. pearl handle, large spear, pen and nail file, full polished, German silver lined, knurled. Per dozen, $72.00

No. 73327—2⅞-inch pearl handle, full polished, silver lined, knurled. .....Per dozen, $84 00

No. 73293—3⅜-in. pearl handle, brass lined, German silver tips Doz., $72 00

No. 73282—3¼-in. pearl handle, brass lined, Ger. silver bolsters...Dz. $66.00

No. 72480—3⅞-in. pearl handle, German silver lined, knurled, German silver bolsters..... ..Per dozen, $84.00

One-half dozen in a box.

RAZORS

UNIVERSAL

Black Rubber Handle, hollow ground, square shoulder, polished and etched.

No. 222-R—⅝-inch Round Point .Dozen $20.00
No. 222-S—⅝-inch Square Point Dozen 20 00

Red Celluloid Handle, hollow ground, square shoulder, Polished and etched.

No. 226—⅝-inch Round Point .....Dozen $24.00

Black Rubber Handle, full hollow ground, Polished and etched.

No. 344½—½ inch Square Point . . . ..Dozen $30.00
No. 344R ⅝-inch Round Point Dozen 30.00
No. 344-S —⅝-inch Square Point .. ..Dozen 30 00

Ivoroy White Flat Handle, three-quarters hollow ground, crocus polished, gold etched.

No. 295½ ½-inch Sqpare Point ... . .Dozen $36 00
No. 295 —⅝-inch Square Point .. . . . .Dozen 36.00

Each Razor packed in individual container.
One half dozen in a box.

Flat Tortoise Celluloid Handle, full hollow ground, gun metal tang and back. Polished and gold etched.

No. 348—⅝-inch Square Point .....Dozen $36.00

Ivoroy White Oval Handle, full hollow ground, gun metal tang and back Polished and gold etched.

No. 345½—½-inch Barbers Point .. Dozen $36.00
No. 345 —⅝-inch Barbers Point . . .Dozen 36 00

Tortoise Oval Celluloid Handle, extra full hollow ground, crocus polished, gold etched.

No. 347—½ inch Barbers Point . ...Dozen $42.00

Flat Black Rubber Handle, full hollow ground. Pearl tang, frosted gold etching.

No. 354—⅝-inch Square Point . ..Dozen $54 00

Each Razor packed in individual container.
One half dozen in a box

CURKO WRENCH SETS

Milled from Solid Bar.

No. C-2—Contains 6 sockets. Fits $\frac{7}{16}$, $\frac{9}{16}$, $\frac{5}{8}$ and $\frac{1}{2}$ in A.L.A.M. Nuts and Screws and $\frac{5}{16}$ in. S.A.E. Nuts and Screws. Weight set, 1¼ lbs. ..... Set $1 25

No. C-3—Contains 8 sockets. Fits $\frac{7}{16}$, $\frac{9}{16}$, $\frac{5}{8}$ and $\frac{1}{2}$ in. A.L.A.M. Nuts and Screws and S.A.E. Nuts and Cap Screw Heads ⅛ to $\frac{9}{16}$ in. incl. Wgt. set, 1¼ lbs. Set 2.00

Both above sets furnished in a canvas container.

SOCKET WRENCH SETS

WALDEN

Set contains one 9 in. reversible ratchet wrench, one 9 in. extension bar, one plug connector, one socket connector, one universal joint, seven hexagon steel sockets and one square steel socket. Sockets made from solid bar and fit U.S. Standard hexagon nuts, ¼ $\frac{5}{16}$ and $\frac{3}{8}$ in. U.S. Standard hexagon cap screw heads, 5-16, ¾ 7-16 $\frac{1}{2}$ and $\frac{9}{16}$ in.; S.A.E. nuts and cap screw heads, 6-16 to $\frac{9}{16}$ inc. The square socket has 9-16 in. opening and fits the latest crank shaft bearing bolts on a Ford car.

No. W-8—Wgt., 5½ lbs. In a finished tool box... ....Set $10 00
(Blackhawk No. 4)

Set contains one 9 in. reversible ratchet wrench, one 9 in extension bar, one plug connector, one socket connector, one universal joint and 16 hexagon steel sockets, machined from a solid bar, fitting U.S. Standard hexagon nuts, ¼ to $\frac{9}{16}$ in. inclus., hexagon head cap screws, ¼ to 1 in. inclusive, and S.A.E. nuts and cap screw heads, ¼ to $\frac{9}{16}$ in. inclusive.

No. W-16—Wgt., 9½ lbs. In a finished tool box . Set $14.50
(Blackhawk No 6)

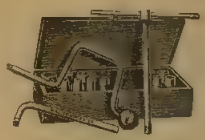
No. W-26—Weight, 19½ lbs. Set $21 00
(Blackhawk No. 8)

Contains 12 in. reversible ratchet wrench, 5 in. and 9 in. extension bar plug and socket connectors, universal joint, tee and offset handles, set of five thin steel wrenches, 16 hexagon sockets machined from solid bar fitting U.S. hexagon nuts ¼ to $\frac{9}{16}$ in., U.S. hexagon cap screw heads ¼ to 1 in, S.A.E. hexagon nuts and cap screw heads ¼ to $\frac{9}{16}$ in.

NOTE—The Blackhawk numbers given in parenthesis are comparative, although not exactly similar.

SOCKET WRENCH SETS

WALDEN



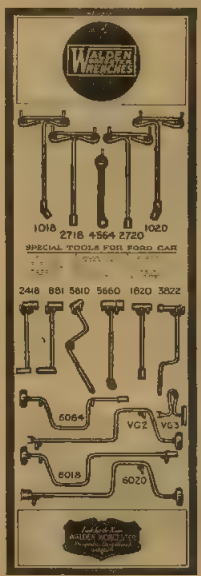
Heavy Duty

Contains 12 hexagon sockets which fit S.A.E. nuts and cap screws ¼ to $\frac{7}{16}$ in., U.S.S. nuts ¼ to $\frac{9}{16}$ in., U.S.S. cap screws ¼ to 1 in.; 1 offset handle, 1 tee handle, 1 extension shank, 1 brace wrench

No. W-25—Weight, 13 lbs . . . . .Set $12 00
Packed in a substantial wooden box

DISPLAY BOARD

FORD CAR STOCK SET



No. 80—Walden. Weight complete, 153 lbs.. Set $85.00
Size Board, 6 ft. by 2 ft.
Contains 80 Wrenches, as follows:

NO.		EACH	NO.		EACH
5	1620	$0 75	5	6064	$ 86
5	5810	60	5	9018	95
5	2718	65	5	6020	.95
5	2720	65	5	VG2	.95
5	4564	1 00	5	VG3	.55
5	2418	90	5	5660	1 30
5	1018	2 50	5	1881	1 20
5	1020	2 50	5	3822	.70

WALDEN DISPLAY BOARDS

SPECIAL
FORD CAR STOCK SET

ADAPTED TO
OTHER POPULAR CARS

The 8 Most Popular Socket Wrenches

Indispensable for Ford Cars and General Service

No. 40—Walden. Wt. 70 lbs. Set $35 50

Board Size, 3 ft. 9 in. x 1 ft.

Contains 40 Wrenches, as follows

NO.	EACH
5—1420	$1.10
5—1620	.75
5—2418	.90
5—2718	.65
5—3620	.80
5—5660	1 30
5—5810	.60
5—7018	1 00

SPEC'L FORD OWNER SET

The Wrenches in these sets will take care of practically all bolts and nuts on Ford cars.

No. 57—Walden. Wt. 5¼ lbs. Set $4.55
(Blackhawk No. 46)
One set in a box

RIM WRENCHES

No. 20—Walden. Contains five of each of the four popular sizes of rim wrenches. Wgt., 65 lbs. ..... Set $22 00

NO	EACH	TOTAL
5—1520—5-8 in.	$1.10	$5.50
5 1522—11 16 in.	1.10	5 50
5 1524—3-4 in.	1.10	5.50
5—1528—7-8 in.	1 10	5 50

Sizes for Demountable Rims

5-8 in.—Kelsey, Ford, Jaxon, Simplicity

11-16 in.—Firestone, Fisk Demountable, Goodrich, Gorman

3 4 in.—Baker, Continental, Detroit, Goodyear, Fisk, Stan-weld, Buick

7-8 in.—Fisk, Goodyear Trucks

The Wrenches are the latest (new design) type. The loop handles give greater leverage, therefore more power to start the nut. The short swing gives less hand travel with more speed to unscrew the nut after it is started.

This assortment can be changed to suit purchaser, as board will be furnished with twenty Rim Wrenches of the 1500 series.

CHEVROLET SET

No. 39-A—Walden. Weight set, 45 lbs. ..... Set $25 25

Size Board, 3 ft. 7 in. by 12 in

Contains 30 Wrenches, as follows:

NO	EACH	TOTAL
5—891	$0.80	$4.00
5 894	.85	4.25
5 895	.70	3.50
5 494	.50	2.50
5—2418	.90	4 50
5—5660	1.30	6 50

CHEVROLET SETS

No. 39-B—Walden. Weight set, 108 lbs. ..... Set $66.75

Size Board, 6 ft. by 2 ft.

Contains 55 Wrenches, as follows:

NO.	EACH	TOTAL
6—891	$0.80	$4.00
5—894	.85	4.25
6—895	.70	3.50
5—494	.50	2.50
5—1020	2.50	12.50
5—2418	.90	4.50
5—2716	.65	3.25
5—2718	.65	3.25
5—4234	1.65	8.25
5—5660	1 30	6.50
5—6016	.95	4.75
5—6018	.95	4.75
5—6024	.95	4.75

SPECIAL FORD WRENCHES

VALVE GRINDER

Short Shank

No. VG3—Walden ..... Each $0.55
(Blackhawk No 4003)

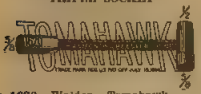
Sockets shaped to fit valve heads and fitted with hardened steel pins. Weight, ¾ lb.

Long Shank Brace

No. VG2—Walden .....Each $0.95
(Blackhawk No. 4002)

An especially desirable tool for garages. Weight, 1¼ lbs.

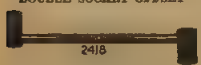
TRIPLE SOCKET



No. 1620—Walden, Tomahawk, ... Each $0.75
(Blackhawk No. 4320)

Socket sizes, ⅜ and ½ in. This is the original triple socket wrench. Designed for use on cylinder head bolts, rear axle housing nuts, water intake and outlet cap screws, rear axle nuts, crank case lower cover, drive shaft housing stud nuts, differential drive gear cap screws and controller shaft bracket nuts.

DOUBLE SOCKET OFFSET



No. 2418—Walden Each $0 90
(Blackhawk No. 4218)

Socket sizes, ⅞ and ¾ in.; handle, 11 in. Used on brake shoe support, connecting rod clamp, crank shaft (main) bearing, fan bracket spindle, steering gear post, steering post bracket, spindle connecting rod and front radius rod of Ford cars. No. 1881 also fits main bearing bolt heads

No. 1881—Walden Each $1.20
(Blackhawk No. 4219X)

Length over all, 9 in. Socket sizes, ⅞-in. hexagon and ⅞-in. square. Fits crank shaft bolt and nut, piston pin locking screw, running board bolt nut, running board to fender bolt nut.

TRIPLE SOCKET OFFSET

No. 5660—Walden Each $1 30
(Blackhawk No. 4330)

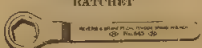
Socket sizes, ⅜, ⅞ and ⅛ in. Designed for heavy duty. Used on drive shaft pinion, front spring clip, hub bolt and nut, radius rod, rear hub lock, rear spring clip spindle arm, and body bolts.

TRANSMISSION RATCHET

No. 4564 Walden . . Each $1 00
(Blackhawk No. 4222X)

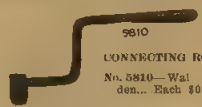
Ratchet end has ⅛ in. hexagon opening. Opposite end, ⅛-inch hexagon opening for Champion "X" spark plugs. Weight, ½ lb.

RATCHET



No. 645—Mossberg Weight, ¼ lb. .....Each $0 50

Reverse and brake pedal tension spring Burnished nickel finish



CONNECTING ROD

No. 5610—Walden... Each $0.60
(Blackhawk No. 4120)

No. 623 —Mossberg .....Each .58

Socket size, ⅝ in. Fits all connecting rod nuts, including the fourth connection. This is the original design, the first wrench made to reach the fourth connection without removing the engine from the car Right angle bends and loop handle

WHEEL ASSEMBLY

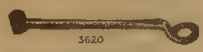
No. 1490—Walden. Wgt 1¾ lbs. . . . . Each $3.00

Covers a demand for a single, substantial, serviceable wrench for assembling wheels on a Ford car.

A brace (speed wrench), with two sockets, each having two broached openings to take four parts, front hub cone and axle nut, hub cap and rear axle nut.

Dimensions: Extreme length, 18⅛ in.; diameter, 9-16 in.; leverage, 6 in.; sweep, 12 in.; swivel handles on each on dadjoining socket

COMBINATION SPARK PLUG AND CYLINDER HEAD



No. 3620 Walden Each $0.80
(Blackhawk No. 4230)

Length over all, 11 in. Socket sizes, ⅞ and ⅝ in. Weight, 1⅛ lbs.

The ⅞-in hexagon type opening has been so designed as to fit down squarely on the spark plug, which is not true when using usual claw or open end type.

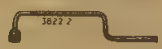
The ⅝-in. socket has been shaped to make it possible to take all cylinder head cap screws, even the two under the dash on latest models

Used on cylinder head, spark plug, and water cylinder inlet and outlet

Barcalo—Weight, 1 lb Each $0.60

Barcalo Ford Spark Plug, Rim and Cylinder Head Wrench. Drop forged, high quality, low priced

FLY WHEEL CAP SCREW



No. 3622—Walden ... ... Each $0.70
(Blackhawk No. 4122)

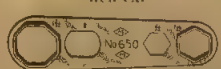
Socket size, ⅛-in hexagon. An ugly places made accessible for a socket wrench

SPEED BRACE SOCKET

No. 6064—Walden . .....Each $0.85
(Blackhawk No. 4116)

Special short speed wrench, 12½ in. over all. ½-in. socket, particularly for use on crank case lower cover. Also used on axle housing, differential drive gear, front and rear fenders and muffler rods on Ford cars. This tool is generally useful for all ⅜-in A.L.A.M. cap screws on all cars

HUB CAP



No. 650—Mossberg Weight, ⅛ lb. ..... Each $0.20

WIRE HANDLE SOCKET WRENCHES

The usefulness of this type of wrench in the automobile field has created a persistent demand for Walden wrenches

Early in January, 1920, the Walden-Worcester Inc installed a new automatic plating machine, which gives to their tools a Triple Rust-Proof Finish Successive deposits of zinc, copper and nickel produce a lasting finish

The openings are made 1-64 oversize instead of 1-32 oversize, which practically eliminates the old trouble of "ringing" the wrench

In order to readily find out just what nuts or bolts these Walden wrenches will fit, we give the table as shown below.

NO.	Socket Sizes	S. A. E. Nuts & Cap Scr	U. S. Std. Nuts	U. S. Std Cap Screws
0014	7/32	1/4	..	1/4
0016	1/4	9/32	1/4	9/32
0018	9/32	5/16	..	5/16
0019	5/16	.....	5/16	..
0020	3/8	11/32	..	11/32
0022	11/32	.....	3/8	..
0024	3/8	13/32	..	13/32
0025	13/32	.....	7/16	..
0026	7/16	.....	..	7/16
0028	15/32	7/16	1/2	15/32
0030	1/2	15/32	..	..
0031	9/16	.....	9/16	..
0032	1	17/32	..	9/16
0034	1 1/32	9/16	5/8	..
0036	1 1/16	.....	..	5/8
0040	1 1/4	5/8	3/4	..

The last two figures represent the sizes of the socket. For instance, the socket is 14-32 or 7-16 (.0014 in the table). The exact opening is 29-64, but the 1-64 oversize is clearance

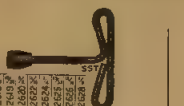
TEE-FLEX UNIVERSAL JOINT

Walden NO.	Blackhawk No.	Opening	EACH
1016	516	1-2 in	$2 50
1018	518	9-16 in.	2.50
1020	520	5-8 in.	2 50

No. 2500 Series

Length of Handle, 7 in.

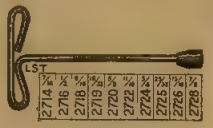
Walden NO.	Blackhawk No.	Opening	EACH
2514	1114	7-16 in	$0 55
2516	1116	1 2 in	.55
2518	1118	9-16 in	.55
2519	1119	19-32 in	.55
2520	1120	5-8 in	.55
2522	1122	11-16 in.	.55
2524	1124	3-4 in.	.55
2525	1125	25-32 in.	.55
2526	1126	13-16 in.	.55
2528	1128	7-8 in.	.55



No. 2600 Series

6 in. Short Shank, 6 in. Tee Handle

Walden NO.	Blackhawk No.	Opening	EACH
2614	2114	7 16 in.	$0.60
2616	2116	1-2 in	.60
2618	2118	9-16 in.	.60
2619	2119	19-32 in.	.60
2620	2120	5-8 in.	.60
2622	2122	11-16 in.	.60
2624	2124	3-4 in.	.60
2625	2125	25-32 in.	.60
2626	2126	13-16 in.	.60
2628	2128	7-8 in.	.60



No. 2700 Series

12 in. Long Shank, 6 in. Tee Handle

Walden NO.	Blackhawk No.	Opening	EACH
2714	3114	7-16 in.	$0.65
2716	3116	1-2 in.	.65
2718	3118	9-16 in.	.65
2719	3119	19-32 in.	.65
2720	3120	5-8 in.	.65
2722	3122	11-16 in.	.65
2724	3124	3-4 in.	.65
2725	3125	25-32 in.	.65
2726	3126	13-16 in.	.65
2728	3128	7-8 in.	.65

Openings are actually 1-64 in. larger than shown

SPEED

No. 6000 Series

Length over all, 19¾ in. Shank, 11¾ in Metal Tops with Cone Bearings.

Walden NO.	Blackhawk No.	Opening	EACH
6014	6114	7-16 in.	$0.95
6016	6116	1-2 in.	.95
6018	6118	9-16 in.	.95
6019	6119	19-32 in.	95
6020	6120	5-8 in.	.95
6022	6122	11-16 in.	.95
6024	6124	3-4 in.	.95
6025	6125	25-32 in	.95
6026	6126	13-16 in.	.95
6028	6128	7-8 in.	.95

NEW DOUBLE-POWER SPEED

More Power—More Speed
Less Hand Travel—More Leverage

Socket Size, 9-16 in. Shank, 11 in.

Length over all, 19¾ in.

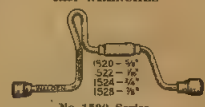
No. 7018—9-16 in. socket. Weight, 2 lbs. ..... Each $1.00

OTHER SIZES

No. 7016 ⅜-in socket Each $1 00
No 7020—⅝-in socket. .Each 1 00

An entirely new design in speed wrenches The lesser throw gives more speed (less hand travel). The loop on handle is the grip for extra leverage in releasing and final tightening

RIM WRENCHES



No. 1500 Series

The loop in handle is the grip for more leverage in releasing nut. The lesser throw gives more speed in running nut off bolt. More power and speed

NO.	Opening	Wgt Each	EACH
1520	5-8 in.	2 lbs.	$1.10
1522	11-16 in.	2 lbs.	1.10
1524	3-4 in.	2 lbs.	1.10
1526	7-8 in.	2 lbs.	1.10

No. 1400 Series

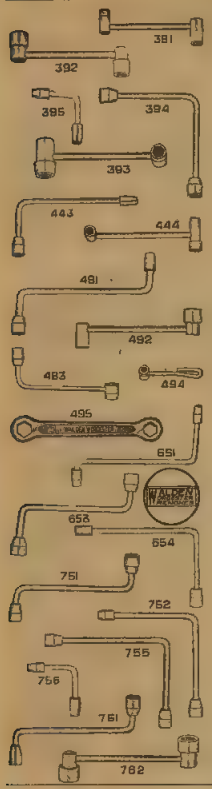
Walden NO.	Blackhawk No.	Opening	EACH
1420	5120	5-8 in.	$1 10
1422	5122	11-16 in.	1.10
1424	5124	3-4 in.	1.10
1426	5126	13-16 in.	1.10
1428	5128	7-8 in.	1.10

These steel sockets are machine turned and broached accurately to size The swivel handles are pressed steel. There is only one size nut on any rim, so that this solid handle tool fills all requirements

Sizes for Demountable Rims

⅛—Kelsey.
11/32—Firestone, Fisk Dem, Goodrich.
¾—Baker, Continental, Detroit, Stan-Weld, Goodyear, Fisk.
13/32—Stan-Weld, No. 2 Universal
⅞—Fisk Tires.

All wrenches shown have openings 1-64 in. larger than indicated.
See table above to determine different size nuts that wrenches will fit.



WIRE HANDLE SOCKET WRENCHES

WALDEN SERVICE SELECTIONS

Wrenches designed for some special place on one or more different makes of cars. To determine the different adaptations, write for Walden catalogue covering Service Selections.

No. 391—DOUBLE END OFFSET. Length over all, 8 in. Socket sizes ⅝ and ½ in. Each $0 80

No. 392—DOUBLE END OFFSET. Length over all, 9¼ in. Socket sizes, ⅞ and ¹¹⁄₁₆ in. Each $1.10

No. 393—QUADRUPLE SOCKET OFFSET. Length over all, 10⅛ in. Socket sizes, ¹¹⁄₁₆, 1 ¹⁄₁₆, ¹⁵⁄₁₆, ¾ in. Each $1.80

No. 394—L TYPE. Size, 8x8 in. Socket sizes, ¾ and ⅞ in. Each $0.85

No. 395—L TYPE. Size, 4x4 in. Socket sizes, ½ and ⁹⁄₁₆ in. Each $0.70

No. 443—L TYPE. Size, 9 ½ x6 ½ in. Socket sizes, ⅝ and ½ in. Each $0.80

No. 444—TRIPLE SOCKET OFFSET. Length over all, 9 in. Socket sizes, ½, ⁹⁄₁₆ and ⅝ in. Each $0.85

No. 491—DOUBLE END OFFSET. Length over all, 10½ in. Socket sizes, ⁹⁄₁₆ and ¾ in Each $0 80

No. 492—DOUBLE END OFFSET. Length over all, 10 in. Socket sizes, ¹¹⁄₁₆ and ¹³⁄₁₆ in. Each $1.10

No. 493—DOUBLE END OFFSET. Length over all, 8¼ in. Socket sizes, ⅝ and ²⁵⁄₃₂ or ¾ in Each $0 80

No. 494—OFFSET. Length over all, 6⅛ in. Socket size, ½ in. Each $0.50

No. 495—DOUBLE END BOX TYPE. Length over all, 10 in. Socket sizes, 1¼ and 1⅛ in. Each $0.90

No. 651—DOUBLE END OFFSET. Length over all, 10 in. Socket sizes, ⁹⁄₁₆ and ⁵⁄₈ in. Each $0 80

No. 653—DOUBLE END OFFSET. Length over all, 11 in. Socket sizes, ⅞ and ¹⁵⁄₁₆ in. Each $0.85

No. 654—L TYPE. Size, 10x6 in. Socket sizes, ½ and ⁹⁄₁₆ in. Each $0.80

No. 751—DOUBLE END OFFSET Length over all, 11¾ in. Socket sizes, ⅝ and ²¹⁄₃₂ in. Each $0 80

No. 752—L TYPE. Size, 8x8 in. Socket sizes, ⁹⁄₁₆ and ¹¹⁄₁₆ in. Each $0.80

No. 755—L TYPE Size, 10x7 in Socket sizes, ⅝ and ¾ in Each $0.80

No. 756—L TYPE. Size, 4x4 in. Socket sizes, ½ and ⁹⁄₁₆ in. Each $0.70

No. 761—DOUBLE END OFFSET. Length over all, 10⅛ in. Socket sizes, ¾ and ⅝ in. Each $0.80

No. 782—DOUBLE END OFFSET. Length over all, 10⅜ in. Socket sizes, 1 ⁹⁄₁₆ and 1 in. Each $1.35

HEAVY DUTY OFFSET SOCKET WRENCHES

FOR GENERAL INDUSTRIAL USE

HEAVY HANDLES—LONGER HANDLES—DEEP SOCKETS

No. 4200 Series

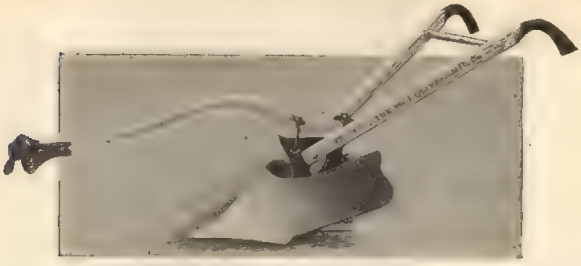
All wrenches have openings $\frac{1}{64}$ in. larger than indicated

Sockets designed for heavy work and are deep to accommodate extra bolt length. Handle length provides unusual leverage—ample for all classes of work. Socket sizes are the short diameter of nut or bolt head to be fitted.

NO.	EACH	Socket Sizes	S.A.E. Nuts & Cap Screws	U.S. Std. Nuts	U.S. Std. Cap Screws	Handles	O.D. Socket	Length Socket	Clearance Under Hdle.	EACH	NO.
4228	$1.10	⅞ in.	⅞ in.	⅛ in.	⅞ in.	⅝x10 in.	1⅝ in.	2¼ in.	1⅝ in.	$1.10	4228
4230	1.10	¹⁵⁄₁₆ in.	⅝ in.	....	....	⅝x10 in.	1⅝ in.	2¼ in.	1⅝ in.	1.10	4230
4231	1.30	¹⁵⁄₁₆ in.	....	⅞ in.	....	⅝x10 in.	1⅝ in.	2¼ in.	1⅝ in.	1.30	4231
4232	1.40	1 in.	¹¹⁄₁₆ in.	....	¾ in	¾x12 in.	1⅝ in.	2½ in.	1⅛ in.	1.40	4232
4234	1.65	1 ⅛ in.	¾ in.	⅝ in	....	¾x12 in.	1⅝ in.	2½ in.	1⅛ in.	1.65	4234
4236	1.80	1 ⅛ in	....	....	⅞ in	¾x12 in.	1⅝ in.	2⅝ in.	1⅛ in.	1.80	4236
4238	1.95	1 ⅛ in.	....	....	....	¾x13 in.	1⅝ in.	3 in.	2 in.	1.95	4238
4240	2.20	1 ¼ in.	⅞ in	¾ in	1 in	¾x15 in.	1⅝ in	3 in.	2 in	2.20	4240
4242	2.30	1 ⅛ in.	....	....	....	¾x16 in.	2 ⅛ in.	3½ in.	2¼ in	2.30	4242
4244	2.50	1 ⅜ in	....	....	1 ¼ in	¾x16 in.	2 ⅛ in	3¼ in.	2¼ in.	2.50	1244
4246	2.75	1 ⅛ in	1 in	⅞ in	....	⅞x18 in.	2 ⅛ in	3½ in.	2 ⅛ in.	2.75	4246
4248	3.00	1 ½ in.	....	....	1 ½ in	⅞x18 in.	2 ⅛ in	3¾ in.	2¼ in	3.00	1248
4250	3.00	1 ⅛ in	....	....	....	⅞x18 in	2 ⅜ in.	3⅞ in.	2⅜ in.	3.00	4250
4252	3.30	1 ⅝ in	1 ⅛ in	1 in	....	⅞x18 in.	2 ⅜ in	3⅞ in.	2⅜ in.	3.30	4252
4254	3.50	1 ¾ in	....	....	....	⅞x18 in.	2 ⅜ in	3⅞ in.	2 ⅛ in.	3.50	4254
4256	3.50	1 ¾ in.	....	....	....	1 x20 in.	2 ⅜ in.	3⅞ in.	2 ⅛ in	3.50	4256
4258	3.85	1 ¾ in.	1 ¼ in.	1 ⅛ in	....	1 x20 in.	2 ⅜ in.	3⅞ in.	2 ⅛ in.	3.85	4258
4260	4.10	1 ⅞ in	....	....	....	1 x24 in.	2 ⅜ in	4⅝ in	3 ⅛ in.	4.10	4260
4264	4.40	2 in	1 ⅜ in	1 ¼ in.	..	1 x24 in	2 ⅜ in	4⅝ in.	3 ⅛ in	4.40	4264

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"



WM. J. OLIVER REVERSIBLE HILLSIDE PLOWS (STEEL BEAM)

Has chilled share and chilled shoe running entire length of landside which can be replaced at small cost when worn out. Made with solid steel beam, making the plow stronger and more serviceable Mouldboard made separate from Frog This plow operates easily and is suitable for use on hillside or level land Can be set so plow will take land on very steep hillsides.

No. 24 Chilled Hillside Plow (Steel Beam)

A very light 1-horse plow. Can be used on either hillside or level land.

Each

No. 24—Chilled mouldboard, depth 5 in., width 7 in., weight each 65 lbs. $12.00

No. 22 Chilled Hillside Plow (Steel Beam)

A heavy 1-horse or light 2-horse plow adapted for work on hillside or level land An excellent plow for garden work and in small patches of land.

Each

No. 22—Chilled mouldboard, depth 5 in., width 8 in., weight each 95 lbs. $13.50

No. 25 Chilled Hillside Plow (Steel Beam)

A 2-horse plow adapted for work on hillside or level land. Generally used for heavy hillside work.

Nos.	Mouldboard	Depth, in.	Width, in.	Weight each, lbs.	Each
25	Chilled	5	10	110	$18.00
25	Steel	6	10	110	19.00

Middle Breaker Potato Digger Sub-Soil

WM. J. OLIVER STEEL BEAM CHILLED PLOWS

The Wm. J. Oliver Chilled Middle Breaker Plow is used in the South for breaking cotton ridges, laying off corn land and making deep furrows. The shape of this plow insures a smooth, steady running plow which will not choke.

Nos.	Depth	Width	Weight	Each
40	5-in.	8-in.	73 lbs.	$12.50
42	6-in.	10-in.	86 lbs.	14.00
44	6-in	12 in.	90 lbs.	16.50

The Wm. J. Oliver Steel Beam Potato Digger, has malleable standard, chilled shares, steel fingers, stocks and bottoms interchangeable with sub-soiler stocks and bottoms. Digs potatoes quickly, the steel fingers lifting potatoes on top of soil without bruising Made with eight fingers.

No.	Weight	Each
80	95 lbs.	$14.50

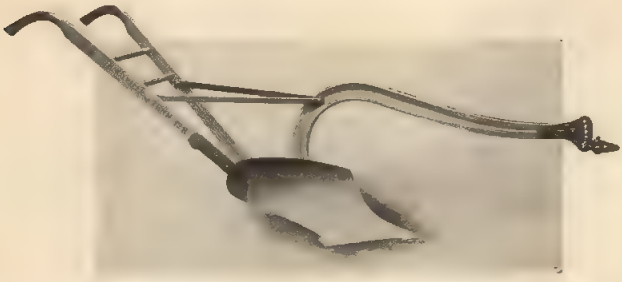
Wm. J. Oliver Steel Beam Sub-Soil Plows. 1-and 2-horse patterns Fitted with chilled or steel points. Draft rod hitch and gauge wheel furnished as extras.

Nos.	Size	Depth	Width	Weight	Each With Chilled Point	Each With Steel Point
50	One Horse	7-in.	5-in.	67 lbs.	$11.00	$12.00
52	Two Horse	9-in.	7-in.	86 lbs.	12.50	13.50

Draft rod hitch for sub-soil plows, each ..... $3.25 Wheels complete for sub-soil plows, each $2.00

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"



CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

Light draught, medium weight 2 horse easy running plows. Have center draught and sloping landside. Excellent finish. Embraces our famous interlocking features. Fitted with deep suction shares. Jointer or rolling coulter and gauge wheel can be furnished if desired Capable of doing most satisfactory work. The No. 12 has separate shin piece. The No 120 has cutter point.

Nos.	Point	Depth, in	Width, in.	Weight each, lbs.	Each
12	Plain	7	12	118	$20.00
120	Cutter	7	12	118	21.00

The No. 120 corresponds in size to No. 20 Oliver Chilled and can be furnished in right hand only.

CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

A heavy 2-horse and light 3-horse plow This plow is better adapted to soils that are hard to shed than any of the other sizes It is what we term a "keener" model, that is, it has a greater slope to the mouldboard than any other plow This model "slips" the dirt more easily than any of our other models, and is constructed to satisfy a demand for a plow of this particular build. Has separate shin piece.

Nos.	Points	Depth, in	Width, in.	Weight each, lbs.	Each
13	Plain	8	13	135	$23.00

LIST PRICES

WM. J. OLIVER PLOWS AND REPAIRS

SUBJECT TO CHANGE WITHOUT NOTICE

Effective Feb. 15, 1926

No. of Plow Level Land	Plow Complete	Pts. Reg Chilled X or C C	Steel Points	Landsides	Mould-boards	Terracing Moulds	Shins	Frogs S. B	Stand-ards W. B	HANDLES Sets Complete	HANDLES Pairs No Irons	Clevises Com-plete
4 R H	8.25	.30	1.75	.60	1.90			1 75		2 20	1.80	1.10
5 R H		.30	1 75	.60	2.00			1.75	1.25	2.20	1.80	1.10
6 R H		.35	1.76	.65	2.00			1.75	1.25	2.20	1.80	1.10
P Nut R H	9.25	.30	1.75	.60	2.00			1 75		2 20	1 80	1.10
7 R H	10.50	.40	1.75	.75	2.25	1.75		1.75	2.00	2.20	2.00	1.20
8 R H	13.50	.45	2.45	.95	2.75	1.75		2 00	2.25	2.20	2.00	1.20
9 R&L	16.50	.60	3.00	1.10	3.00	1.75	.20	2.50	2.50	2.50	2.25	1.30
10 R&L	17.50	.75	3.50	1.30	4.00	1.75	.25	3.00	3.25	2.75	2.25	1.50
11 R&L	18 50	.75	3.50	1.30	4.50	2 00	.25	3.00	3.25	2.75	2.40	2.25
12 R&L	20.00	.85	4.00	1.40	4.75	2.00	.30	3.25	3.50	2.75	2.40	2.25
13 R&L	22.00	.85	4.50	1.60	5.00	2.50	.30	3.50	3.75	2.75	2.40	2.25
14 R&L	24.00	.95	4.50	1.80	5.25	2.50	.30	3.75	3 75	X 75	2 40	2.25
108 R H	10.50	.40	1.90	.70	2.10			2.25		2.20	2.00	1.20
110 R H	16.00	.60	3.10	1.05	3.00			3.00		2 20	2.00	1.30
113 R H	18.00	.70	3.35	1.25	4.00			3.25		2.75	2.25	1.30
119 R H	19.50	.75	3.65	1.35	4.25			3.35		2.75	2.25	1.50
120 R H	21.00	.85	4.75	1.40	4.50			3.50		2.75	2.25	2.25
Hillside Chilled				**Shoes**					**S.B.**			
24	12.00	.30	2.00	.60	2.50			1.25	2.50		1 80	1.20
22	13.50	.60	3.00	.65	3.00			1.50	3.00		1.80	1.20
26	18.00	.85	4.00	1.25	4.00			2.00	4.00		2.40	1.50
Hillside (with steel mould)												
25	19.00				4 00							
Subsoil Cast Point												
50	11.00	.55		.55					4.00	2.25	1.80	1.20
52	12.50	.65		.85					5.00	2.40	2.40	1.50
Subsoil Steel Point									4.00	2.25	1.80	1.20
50	12.00		1.75	.85					5.00	2.40	2.40	1.50
52	13.50		2.25	.85								
Potato Digger									5.00	2.40	2.40	1.50
80	14.50			.85								
Potato Digger Points												
With prongs		3.00										
Wout prongs		1.50										
Middle Breakers, Steel												
8"	14.00		1.25	.85	3.50 Pr.			3.50		2.25	1.80	1.20
10"	16.00		1.75	.85	5.00 Pr.			3.50		2.25	1.80	1.20
12"	18.00		2.50	.85	6.50 Pr.			4.00		2.25	1.80	1.20
14"	21.00		2 75	.85	7.50			4.50		2.40	1.80	1.50
Middle Breakers, Chilled												
10-8"	12.50	.75	1.25	.85	3.50 Pr.			3.50		2.25	1.80	1.20
12-10"	14.00	.85	1.75	.85	4 00 Pr.			3.50		2.25	1.80	1.20
14-12"	15.50	.90	2.50	.85	4 50 Pr			4.00		2.40	1.80	1.20
16-14"	16 50	1 00	2 75	85	5 00 Pr			4 50		2.40	1.80	1.50

EXTRAS FOR HILLSIDE PLOWS

No	Price
20 and 22 Mouldboard F Latches	$ .80
21, 23 and 66 Mouldboard F Latches	1 00
23 and 24 Mouldboard F Latches	80
All Hook Rods	40
24 & 25 Nose Piece (Hinge Block	40
22 and 25 3-Prong E Braces	1 00
24 3-Prong E Braces	.80
All sizes Hook Thimbles	10
20, 23, 23 and 24 Hook Springs	.45
21 and 25 Hook Springs	55
All numbers Handle to Beam Braces	80

EXTRAS FOR SUBSOIL PLOWS

50 and 51 Handle Braces	75
52 and 53 Handle Braces	90
152 and 153 Handle Braces	90
152 and 153 Malleable Frog	2.05
152 and 153 Steel Standard	6.00
152 and 153 Standard and Beam Brace	1.25
152 and 153 Chilled Landside	65
52 Side Hitch Complete	2.25

MISCELLANEOUS EXTRAS

Clamps for Wood Beams	.20
U-Bolts for Wood Beams	.40
Hinge for Vineyard Plow Handles	.40
Wrenches for One Horse Plows	.20
Wrenches for Two Horse Plows	.25

GAUGE WHEELS

Complete for Wood and Steel Beams	3.00
Wheels only	.80
Clamps	.35
Standards	.75
Axle Bolts	.10

Bolts

All sizes except Spreader Bolts	.04
Spreader Bolts, each	.15

JOINTERS

All sizes complete	$4 2
Frames	1 65
Standards	1 75
Points	25
Mouldboards	60
Beam Caps	20
Beam Brackets (front and rear)	45
U Bolts	10

ROLLING COULTERS

12 inch complete	5.75
13 inch complete	6 00
12 inch blades only	2 25
13 inch blades only	2 75
12 inch and 13 inch Yokes	1.00
12 inch and 13 inch Cranks	75
Cone Bearings, per set	25
Clamp Plates, per set	40
Clamp Bolts	.25

STEEL BEAM HANDLE TO BEAM BRACES

4, 5 and 6, per pair	.60
All other numbers, per pair	.75

WOOD BEAM HANDLE TO BEAM BRACES

5 and 6	45
7, 8, 9 and 8-Vineyard	.50
10	1.35
All others	.80

HANDLE BRACKETS

(For base of Plow)

Mouldboard, Nos 7 8 9 and 10	80
Mouldboard, Nos. 11, 12, 13 and 14	1.00
Landside, Nos. 7, 8, 9, and 10	.80
Landside, Nos. 11 12, 13 and 14	1.00
T. Brace, all Numbers	.50
Complete Set, 7, 8, 9 and 10	2.30
Complete Set, 11, 12, 13 and 14	2.50

MISCELLANEOUS CLEVIS PARTS

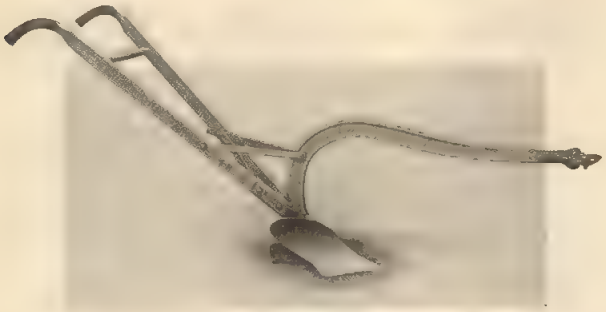
Cross Clevises and Pins no Shackles, No 210 for 7 and 8 S. B Plows	$0 40
Cross Clevises and Pins no Shackles, No 215 for 9 and 10 S B. Plows	.45
Cross Clevises and Pins no Shackles, No 226 for 11 S. B. Plows	50
Cross Clevises and Pins no Shackles, No. 326 for 12, 13 and 14 S. B. Plows	.70
Cross Clevis Pins, all sizes	15
Shackles straight and twisted	.30
Guide and Shackle Pins	10
Jaws for 5 and 6 Plows, per pair, S. B	.35
Jaws for 7 and 8	75
Jaws for 9 and 10 and Subsoil W. B	.85
Jaws for 11	1.00
Jaws for 12, 13 and 14 Plows, per pair, S. B	1.20
Jaws for 16 Plow, per pair, W B	1 20
Jaws for 152 and 153 Subsoil and Beet Digger	1 20
Dial Washer for 152 and 153	.25
Draft Rod Pendulum for 152 and 153	.40
152 and 153 Draft Rod complete	3 25
152 and 153 Draft Rod less Clevis	2 00
152 and 153 Draft Rod Clevis	80
326 Side Hitch	30

Other repairs not listed

All prices subject to change without notice

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"

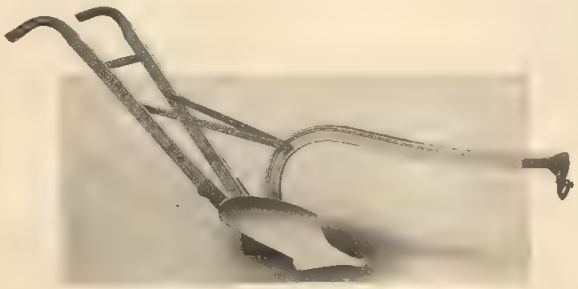


PEANUT CHILLED PLOW (RIGHT HAND ONLY, STEEL BEAM)

Small 1-horse chilled plow One of our very best constructed plows Has an extra large frog, which is the foundation of the plow. Has center draft, sloping landside, fitted with cutter share.

One of the most popular plows on the market for gardening, also for general farm work where a small one-horse plow is used.

	Each
Peanut—Depth 4½ in., width 7 in., weight 65 lbs.	$9.25



CHILLED PLOWS (RIGHT HAND ONLY, STEEL BEAM)

One-horse chilled plows Ideal one-horse plows for planters and truckers Very popular sizes Embraces our famous interlocking features, which makes our chilled line hold their original shapes. Steel beam patterns Right hand only. Extensively used throughout the South.

Nos.	Point	Depth, in	Width, in.	Weight each, lbs.	Each
7	Plain	4½	7	67	$10.50
108	Cutter	4½	7	67	10.50
8	Plain	4¾	8	76	12.50

The No. 108 corresponds in size to AC2 Oliver Chilled and has cutter point.

WM. J. OLIVER PLOWS

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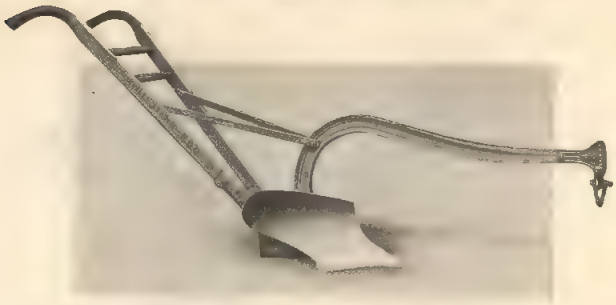
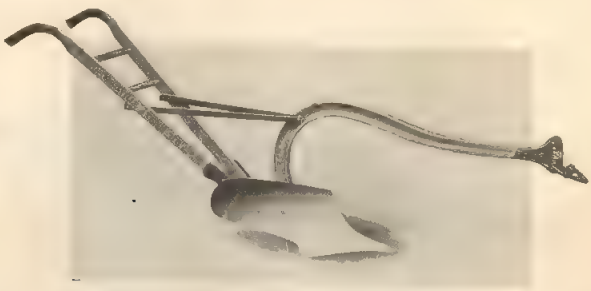


CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

Heavy 1-horse and light 2-horse chilled plows. Very popular sizes. Just the right turn to mouldboard to make a highly successful general purpose plow. Embraces our unequaled interlocking features in construction. The No. 9 has separate shin piece with plain point. The No. 110 has cutter point.

Nos.	Points	Depth, in	Width, in.	Weight each, lbs.	Each
9	Plain	5	9	88	$15.50
110	Cutter	5	9	88	16.00

The No. 110 corresponds in size to No. 10 Oliver Chilled and can be furnished right hand only.



CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

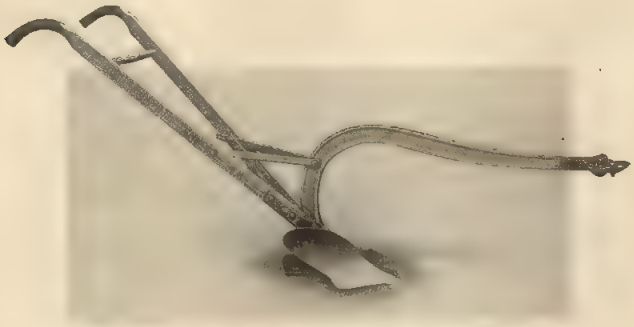
Light and medium 2-horse chilled plows. Built on same lines of construction as the No. 9 and 110 except heavier and larger. Have inter locking landsides and chilled chins or cutters. The No. 10 and 11 have separate shin pieces with plain points whereas the No. 113 and 119 have cutter points.

Nos.	Points	Depth, in	Width, in.	Weight each, lbs.	Each
10	Plain	6	10	90	$17.50
113	Cutter	6	10	90	18.00
11	Plain	6	11	107	18.50
119	Cutter	6	11	107	19.50

The No. 113 corresponds in size to the No. 13 Oliver Chilled, the No. 119 to No. 19. These can be furnished in right hand only.

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"

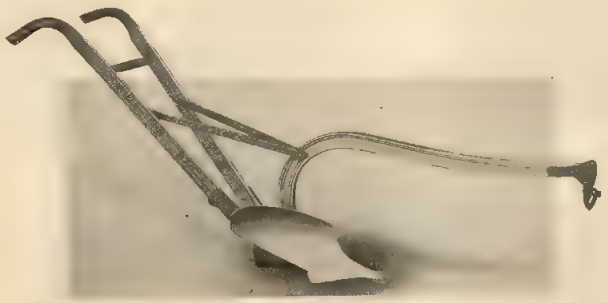


PEANUT CHILLED PLOW (RIGHT HAND ONLY, STEEL BEAM)

Small 1-horse chilled plow. One of our very best constructed plows. Has an extra large frog, which is the foundation of the plow. Has center draft, sloping landside, fitted with cutter share.

One of the most popular plows on the market for gardening, also for general farm work where a small one-horse plow is used.

	Each
Peanut—Depth 4½ in., width 7 in., weight 65 lbs.	$9 25



CHILLED PLOWS (RIGHT HAND ONLY, STEEL BEAM)

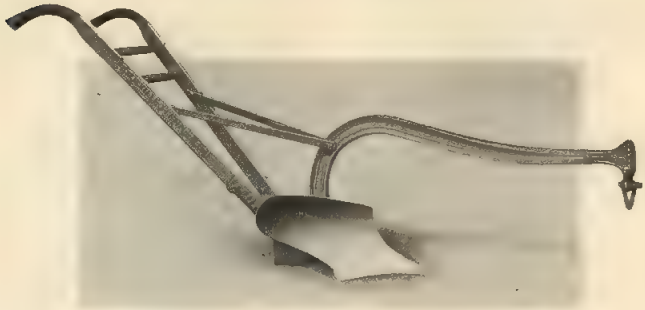
One horse chilled plows. Ideal one-horse plows for planters and truckers. Very popular sizes. Embraces our famous interlocking features, which makes our chilled line hold their original shapes. Steel beam patterns. Right hand only. Extensively used throughout the South.

Nos.	Point	Depth, in	Width, in.	Weight each, lbs.	Each
7	Plain	4½	7	67	$10.50
108	Cutter	4½	7	67	10 50
8	Plain	4¾	8	76	12.50

The No. 108 corresponds in size to AC2 Oliver Chilled and has cutter point.

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"



CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

Heavy 1-horse and light 2 horse chilled plows Very popular sizes Just the right turn to mouldboard to make a highly successful general purpose plow. Embraces our unequaled interlocking features in construction. The No 9 has separate shin piece with plain point. The No. 110 has cutter point.

Nos.	Points	Depth, in	Width, in.	Weight each, lbs.	Each
9	Plain	5	9	88	$15.50
110	Cutter	5	9	88	16.00

The No. 110 corresponds in size to No. 10 Oliver Chilled and can be furnished right hand only.

CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

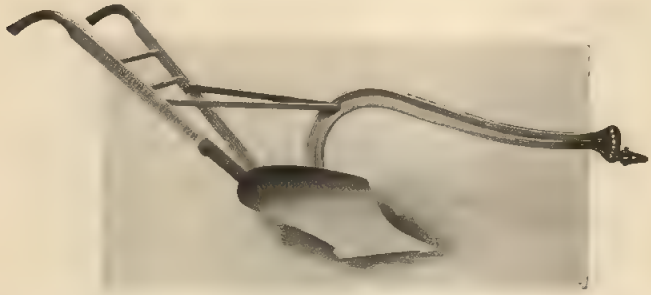
Light and medium 2-horse chilled plows. Built on same lines of construction as the No. 9 and 110 except heavier and larger Have inter-locking landsides and chilled chins or cutters The No 10 and 11 have separate shin pieces with plain points whereas the No. 113 and 119 have cutter points.

Nos.	Points	Depth, in	Width, in.	Weight each, lbs.	Each
10	Plain	6	10	90	$17 50
113	Cutter	6	10	90	18 00
11	Plain	6	11	107	18 50
119	Cutter	6	11	107	19.50

The No 113 corresponds in size to the No 13 Oliver Chilled, the No 119 to No 19 These can be furnished in right hand only.

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"



CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

Light draught, medium weight 2-horse easy running plows. Have center draught and sloping landside. Excellent finish. Embraces our famous interlocking features. Fitted with deep suction shares. Jointer or rolling coulter and gauge wheel can be furnished if desired. Capable of doing most satisfactory work. The No. 12 has separate shin piece. The No. 120 has cutter point.

Nos.	Point	Depth, in	Width, in.	Weight each, lbs.	Each
12	Plain	7	12	118	$20.00
120	Cutter	7	12	118	21.00

The No. 120 corresponds in size to No. 20 Oliver Chilled and can be furnished in right hand only.

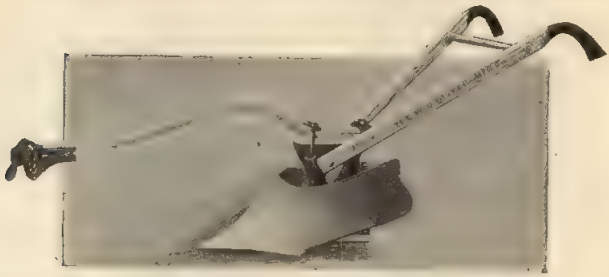
CHILLED PLOWS (RIGHT AND LEFT HAND, STEEL BEAM)

A heavy 2-horse and light 3-horse plow This plow is better adapted to soils that are hard to shed than any of the other sizes. It is what we term a "keener" model, that is it has a greater slope to the mouldboard than any other plow. This model "slips" the dirt more easily than any of our other models, and is constructed to satisfy a demand for a plow of this particular build. Has separate shin piece.

Nos.	Points	Depth, in	Width, in.	Weight each, lbs.	Each
13	Plain	8	13	135	$22.00

WM. J. OLIVER PLOWS

THE STRONGEST PLOW IN THE WORLD, "IT'S IN THE LANDSIDE"



WM. J. OLIVER REVERSIBLE HILLSIDE PLOWS (STEEL BEAM)

Has chilled share and chilled shoe running entire length of landside, which can be replaced at small cost when worn out. Made with solid steel beam, making the plow stronger and more serviceable. Mouldboard made separate from Frog. This plow operates easily and is suitable for use on hillside or level land. Can be set so plow will take land on very steep hillsides.

No. 24 Chilled Hillside Plow (Steel Beam)

A very light 1-horse plow. Can be used on either hillside or level land.

Each

No. 24—Chilled mouldboard, depth 5 in., width 7 in., weight each 65 lbs. $12 00

No. 22 Chilled Hillside Plow (Steel Beam)

A heavy 1-horse or light 2-horse plow adapted for work on hillside or level land. An excellent plow for garden work and in small patches of land.

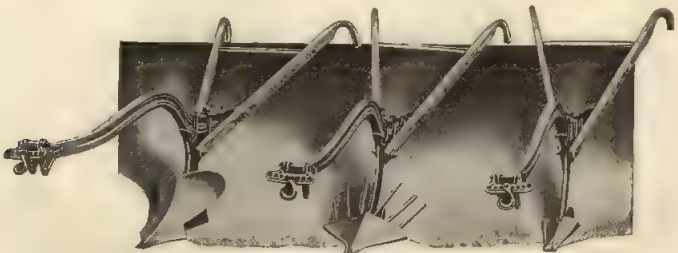
Each

No. 22—Chilled mouldboard, depth 5 in., width 8 in., weight each 95 lbs. $13.50

No. 25 Chilled Hillside Plow (Steel Beam)

A 2-horse plow adapted for work on hillside or level land. Generally used for heavy hillside work.

Nos.	Mouldboard	Depth, in.	Width, in.	Weight each, lbs.	Each
25	Chilled	6	10	110	$18.00
25	Steel	6	10	110	19.00



Middle Breaker Potato Digger Sub-Soil

WM. J. OLIVER STEEL BEAM CHILLED PLOWS

The Wm. J. Oliver Chilled Middle Breaker Plow is used in the South for breaking cotton ridges, laying off corn land and making deep furrows. The shape of this plow insures a smooth, steady running plow which will not choke.

Nos.	Depth	Width	Weight	Each
40	5-in.	8-in.	73 lbs.	$12.50
42	6-in.	10-in.	86 lbs.	14.00
44	6-in.	12-in.	90 lbs.	15.50

The Wm. J. Oliver Steel Beam Potato Digger, has malleable standard, chilled shares, steel fingers, stocks and bottoms interchangeable with sub-soiler stocks and bottoms. Digs pototoes quickly, the steel fingers lifting potatoes on top of soil without bruising. Made with eight fingers.

No.	Weight	Each
80	95 lbs.	$14.50

Wm. J. Oliver Steel Beam Sub-Soil Plows. 1-and 2-horse patterns. Fitted with chilled or steel points. Draft rod hitch and gauge wheel furnished as extras.

Nos.	Size	Depth	Width	Weight	Each With Chilled Point	Each With Steel Point
50	One Horse	7-in.	5-in.	57 lbs.	$11.00	$12.00
52	Two Horse	9-in.	7-in.	86 lbs.	12.50	13.50

Draft rod hitch for sub-soil plows, each . . . . . $3.25 Wheels complete for sub-soil plows, each $2.00

LIST PRICES

WM. J. OLIVER PLOWS AND REPAIRS

SUBJECT TO CHANGE WITHOUT NOTICE

Effective Feb. 15, 1926

No. of Plow Level Land	Plow Complete	Pts Reg Chilled X or C C	Steel Points	Landsides	Mouldboards	Perracing Moulds	Shins	Frogs S B	Stand ards W B	HANDLES Sets Complete	HANDLES Pairs No. Irons	Clevices Complete
4 R H	8.25	.30	1.75	.80	1.90			1.75		2 20	1 80	1 10
5 R H		.30	1.75	.80	2.00			1.75	1.25	2.20	1.80	1.10
6 R H		.35	1.75	.85	2.00			1.75	1.25	2.20	1.80	1.10
P. Nut R H	9.25	.30	1.75	.90	2.00			1.75		2.20	2 00	1.20
7 R H	10.50	.40	1.75	.75	2.25	1.75		2.00	2.00	2.20	2.00	1.20
8 R H	12.50	.45	2 45	.95	2 75	1 75		2.25	2.25	2.20	2.00	1.20
9 R&L	16 50	.60	3 00	1 10	3 00	1 75	20	2 50	2 50	2 50	2 25	1 30
10 R&L	17.50	.75	3.50	1 20	4 00	1 75	25	3 00	3 25	2 00	2 25	1 30
11 R&L	18.50	.75	3 50	1 30	4 50	2 00	25	3 00	3 25	2 75	2 40	1 50
12 R&L	20 00	.85	4 00	1.40	4 75	2 00	30	3 25	3 50	2 75	2.40	2.25
13 R&L	22 00	.95	4.50	1 60	5 00	2 75	30	3 50	3 75	2 75	2.40	2 25
14 R&L	24 00	.95	4.50	1 60	5 25	2 50	.30	3 75		2 20	2.00	1.20
108 R H	10.50	.40	1.90	.70	2.10			2.25		2.20	2.00	1.30
110 R H	16.00	.60	3.10	1 05	3.00			3.00		2.20	2.00	1.30
113 R H	18.00	.70	3.56	1.25	4.00			3.25		2.75	2.25	1.50
119 R H	19 50	.75	3.86	1.35	4.25			3.25		2.75	2.25	1.50
120 R H	21.00	.85	4.75	1.40	4.50			3.50		2.75	2.25	2.25
Hillside Chilled				**Shoes**					S B			
24	12.00	.50	2.00	.60	2.50			1 25	2.50		1.80	1.20
23	12.50	.60	3.00	.65	3.00			1.50	3.00		1.80	1.20
25	18.00	.85	4.00	1.25	4.00			2.00	4.00		2.40	1.50
Hillside (with steel mould)					4 00							
25	19.00											
Subsoil Cast Point									4.00	2.25	1.80	1.20
50	11.00	.55		.55					5.00	2.40	2.40	1.50
52	12.50	.65		.65								
Subsoil Steel Point									4.00	2.25	1.80	1 20
50	12.00		1.75	.85					5.00	2.40	2.40	1.50
52	13.50		2.25	.85								
Potato Digger				.85					5.00	2.40	2.40	1.50
80	14.50											
Potato Digger Points												
With prong	3.00											
Wout prong	1.50											
Middle Breakers, Steel												
8"	14.00		1.35	.85	3.50 Pr.			3.50		2 25	1 80	1 20
10"	16.00		1.75	.85	5.00 Pr.			3.50		2.25	1.80	1.20
12"	18.00		2.50	.85	6.50 Pr.			4.00		2.26	1.80	1 20
14"	21.00		2.75	.85	7.00			4.50		2.40	1.80	1 50
Middle Breakers, Chilled												
10-8"	12.50	.75	1.25	.85	3.50 Pr.			3.50		2.25	1.80	1 20
12-10"	14 00	.85	1.75	.85	4.00 Pr.			4.00		2.26	1.80	1 20
14-12"	15.50	.90	2.50	.85	4 50 Pr.			4.00		2.40	1.80	1.20
16 14"	16 50	1.00	2 75	.85	5.00 Pr			4.50		2.40	1.80	1 50

EXTRAS FOR HILLSIDE PLOWS

No	Price
20 and 22 Mouldboard F Latches	$ .80
21, 25 and 66 Mouldboard F Latches	1.00
23 and 24 Mouldboard F Latches	.80
All Hook Rods	40
24 & 25 Nose Piece (Hinge Block)	.40
22 and 25 3-Prong E Braces	1.00
24 3-Prong E Braces	80
All sizes Hook Thimbles	10
20, 22, 23 and 24 Hook Springs	40
21 and 25 Hook Springs	.55
All numbers Handle to Beam Braces	80

EXTRAS FOR SUBSOIL PLOWS

50 and 51 Handle Braces	75
52 and 53 Handle Braces	.90
152 and 153 Handle Braces	.90
152 and 153 Malleable Frog	2.05
152 and 153 Steel Standard	6.00
152 and 153 Standard and Beam Brace	1.25
152 and 153 Chilled Landside	.85
52 Side Hitch Complete	3 25

MISCELLANEOUS EXTRAS

Clamps for Wood Beams	.30
U-Bolts for Wood Beams	.40
Hinge for Vineyard Plow Handles	.40
Wrenches for One Horse Plows	.20
Wrenches for Two Horse Plows	25

GAUGE WHEELS

Complete for Wood and Steel Beams	2.00
Wheels only	.90
Clamps	.35
Standards	.75
Axle Bolts	.10

Bolts

All sizes except Spreader Bolts	.04
Spreader Bolts, each	.15

JOINTERS

All sizes complete	$4.95
Frames	1 65
Standards	1 15
Points	75
Mouldboards	.50
Beam Caps	20
Beam Brackets (front and rear)	15
U-Bolts	40

ROLLING COULTERS

12 inch complete	5 75
13 inch complete	6 00
12 inch blades only	2 25
13 inch blades only	2 75
12 inch and 13 inch Yokes	1 00
12 inch and 13 inch Cranks	75
Cone Bearings, per set	25
Clamp Plates, per set	40
Clamp Bolts	15

STEEL BEAM HANDLE TO BEAM BRACES

4, 5 and 6, per pair	.80
All other numbers, per pair	.75

WOOD BEAM HANDLE TO BEAM BRACES

5 and 6	.45
7 8, 8 and 8 Vineyard	50
16	1.25
All others	90

HANDLE BRACKETS

(For base of Plow)

Mouldboard, Nos. 7, 8, 9 and 10	80
Mouldboard, Nos. 11, 12, 13 and 14	1 00
Landside, Nos. 7, 8, 9, and 10	80
Landside, Nos. 11 12, 13 and 14	1 00
T. Brace, all Numbers	50
Complete Set, 7, 8, 9 and 10	2 30
Complete Set, 11, 12, 13 and 14	2 50

MISCELLANEOUS CLEVIS PARTS

Cross Clevises and Pins no Shackles, No 210 for 7 and 8 S. B. Plows	$0 40
Cross Clevises and Pins no Shackles, No 215 for 9 and 10 S. B Plows	.45
Cross Clevises and Pins no Shackles, No. 226 for 11 S. B. Plows	.50
Cross Clevises and Pins no Shackles, No. 226 for 12, 13 and 14 S. B. Plows	.70
Cross Clevis Pins, all sizes	.15
Shackles, straight and twisted	.30
Guide and Shackle Pins	.10
Jaws for 5 and 6 Plows per pair, S. B.	.35
Jaws for 7 and 8	.75
Jaws for 9 and 10 and Subsoil W. B.	.85
Jaws for 11	1 00
Jaws for 12, 13 and 14 Plows, per pair, S. B.	1 20
Jaws for 16 Plow, per pair, W. B.	1 20
Jaws for 152 and 153 Subsoil and Beet Digger	1 25
Dial Washer for 152 and 153	25
Draft Rod Pendulum for 152 and 153	.40
152 and 153 Draft Rod complete	3 25
152 and 153 Draft Rod less Clevis	2 00
152 and 153 Draft Rod Clevis	80
326 Side Hitch	30

Other repairs not listed

All prices subject to change without notice

American Car and Foundry Company

General Offices

165 Broadway, NEW YORK | Railway Exchange, CHICAGO | 915 Olive Street, ST. LOUIS

Plants Manufacturing Mine Equipment

BERWICK, PA. BLOOMSBURG, PA. HUNTINGTON, W. VA. TERRE HAUTE, IND.

Product

Mine Cars, Car Trucks, Car Irons, Pins and Links, Chilled Cast Iron Wheels, Electric Rivet Heaters, Bar Iron and Steel, Bolts, Nuts, Rivets, Iron Body Gate Valves, Flanged Pipe.

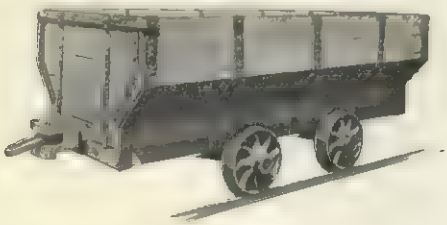
Mine Cars

From our several industrial plants devoted largely to the manufacture of rolling equipment for standard gage and industrial railways we have selected the plants at Berwick and Bloomsburg, Pa., Huntington, W. Va., and Terre Haute, Ind., for the production of mine cars because of their convenient location with respect to the coal fields.

We build wood, steel and composite cars, either according to our design or those of your engineer; cars with plain or roller bearing wheels, tight or loose axle; cars with journal-box bearings; cars with swing or lift ends; cars with tight (solid) ends; cars with spring draft gear designed to turn on shank; etc., etc. Our experience derived from building cars of a large variety of types is always at your service; our large facilities enable us to suit the needs of every mine.

Standard Car selected for Ziegler No. 2 Mine.

The satisfactory service given by the car described above—and no mine has ever given a car a severer test—resulted in an order for 350 "Car Foundry" cars (to be adopted as standard) at the new Ziegler No. 2 mine. This car is also of 5 tons capacity but has a lift gate. It uses the same type of bearing and also a 3" hot rolled steel axle, .30 to .50 carbon, the axle revolving with the wheel. Wheels are 18 in. and wheel base 38 in. A substantial, well built car from the Terre Haute plant.



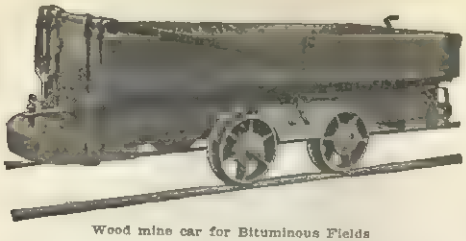
The car with the record. Used at Mine No. 1, Ziegler

The car shown here is the standard at Ziegler No. 1 —the mine that produced 164,109 tons, all of it carried in "Car Foundry" cars. This car is of 5 tons capacity, has solid ends for a rotary dumping cage, uses Fleming-Hyatt cast steel self-aligning journal bearings and a cast steel coupler head with spring draft gear. A sturdy and easy rolling car built at the Terre Haute plant.

Car in use at Ayrshire Coal Co. Mines.

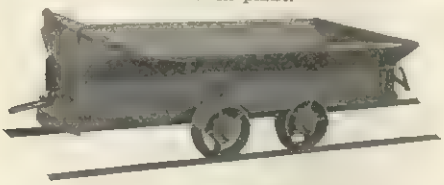
Composite type of car having steel sides and ends, with 3" oak floor. Strongly reinforced around top and corners with heavy angles. Solid ends for rotary dump. Has 14" wheels, with a closed hub containing American Car and Foundry's standard caged roller bearings for 3"x7" journals. Axles are 3¼" hot rolled steel .30 to .50 carbon with journals turned and burnished to 3"x7".

This car, built at Terre Haute, Ind., has stood up under the severest service for several years, with practically no expense for repairs.



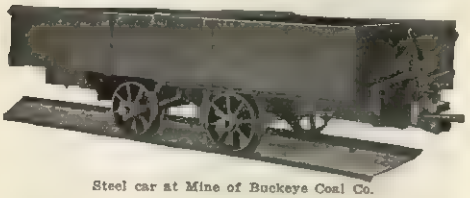
Wood mine car for Bituminous Fields

A popular type of car for the soft coal fields. Has a round axle truck with 16″ reduced end, self-oiling wheels with push button oilers. Axles are 2¼″ diameter and of cold-rolled steel. Bumpers of pressed steel. Capacity, 46 cu. ft. Weight, 2100 lbs. Built at the Berwick plant.



Wood car used by Clearfield Colliery Co.

This car was designed for operation in low seams. The wheels are 14″ in diameter with closed ends and are self-oiling. Axles are 2″ in diameter and of cold-rolled steel. Wood brake blocks with spring release are used. Capacity, 26 cu. ft. Weight, 1400 lbs. Built at Berwick plant.



Steel car at Mine of Buckeye Coal Co.

The illustration shows a steel car designed for a rotary dump. Roller-bearing, self-aligning boxes, with 18″ wheels tight on axles. Drawbar is of the spring type with open side and is designed to turn on shank. All-iron brake with equalizer and adjustable shoes. Car can be dumped without uncoupling. Capacity, 119 cubic feet. Weight, 3600 lbs. Built at Berwick plant.

Car in Mines of Jamison Coal & Coke Co.

A composite car for high seam bituminous coal. Has a 3″ floor and steel sides, ends and gates, reinforced with standard pressed steel shapes. Open hub, self-oiling, 18″ wheels, loose on axle. Capacity, 100 cubic feet. Weight, 4100 lbs. Built at Berwick plant.

Car designed for the Anthracite Field.

A composite type of car designed for use in anthracite mines. The axles are 3¼″ diameter, reduced to 3″ at the journal boxes. Wheels are inside, 16″ diameter and self-oiling. Capacity, 60 cu. ft. Weight, 3000 lbs. Built at Berwick plant.

Car used by Island Creek Coal Co

Composite type of car with 3″ oak bottom. Length inside—9′ 1¾″; width inside—5′ 5″; height of sides above rail—3′ 5⅛″; Capacity—96 cu. ft. A strongly built and serviceable car built at the Huntington plant.

Car used in Beckley Seam by Slab Fork Coal Co.

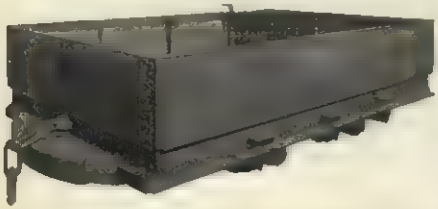
The cut above shows a low-sided, solid-end, composite car designed for rotary dumping, a practice which is rapidly growing in all coal fields. The two solid ends plus the support of the three car ribs makes the strongest possible construction and thus decreases the cost of upkeep. The construction data on this car reads as follows: height above rail—31″; length inside—10′ 0″; width inside—6′ 4″; capacity—80 cu. ft.; weight—3600 lbs. Built at Huntington plant.

Box Type of Car at Mine of Red Jacket Consolidated Coal & Coke Co

One of our numerous designs of square box type cars, for use in rotary dump. Distinctive features of this car are the application of our regular type roller bearing truck instead of outside journal boxes, and a simple but effective spring drawbar.

Bottom View of Car Shown Above

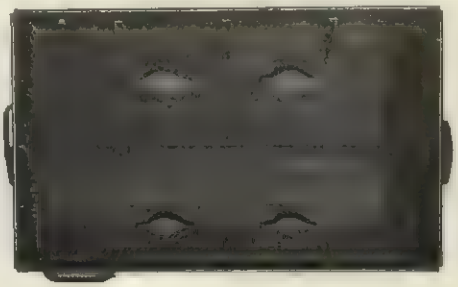
The "box" type of car with channel iron frame and inside angle irons for fastening the wooden sides and ends is illustrated below. This car shows an unusually high ratio of useful coal load to the tare weight, thus adding greatly to economy in haulage. The three small angles noticed at the car



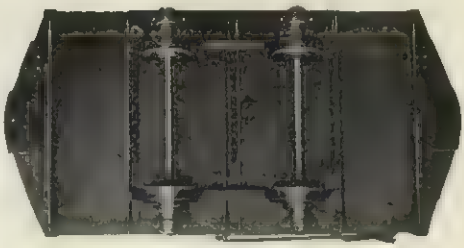
A maximum capacity car used by Raleigh-Wyoming Coal Co.

side and riveted to the channel beam provide support for the car in the dumping cycle. Note the location of brake lever protected by a sheet-iron pocket inside of car where it is free from possibility of damage. The data applying to this particular car is: length inside—10′ 0″; width inside—6′ 0″; height inside—2′ 0″; weight—4200 lbs; capacity—120 cu. ft. Built at Huntington plant.

"Super-Extra" Square Box Type of Car at Mine of the King Fuel Co



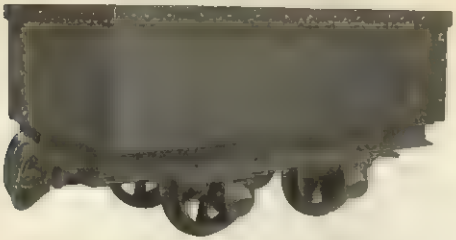
Interior View of Car Shown Above



Bottom View of Car Shown Above

The three views above show a "Super-Extra" square box type car. Note the pressed steel end similar to that which is so largely used in modern railroad box cars.

All of our cars with outside journal boxes are built with "railroad" car wheels, heat treated axles and roller bearing boxes, a combination which reduces truck failures to a minimum.



Built for Doe Run Lead Co., Bonne Terre, Mo.

48 Cu. Ft. Steel Ore Car for Rotary Dump

Length, Over-All.....7 ft. 10½ ins.
Width, Over-All.....4 ft. 3 1/16 ins.
Height, Over-All from Top of Rail....3 ft. 4¾ ins.
Length, Inside .....6 ft. 5½ ins.
Width, Inside .....3 ft. 11½ ins.
Height, Inside .....1 ft. 10⅜ ins.
Wheel Base .....28 ins.
Track Gauge .....24 ins.
Trucks....16" Dia. Wheel with Outboard Bearings

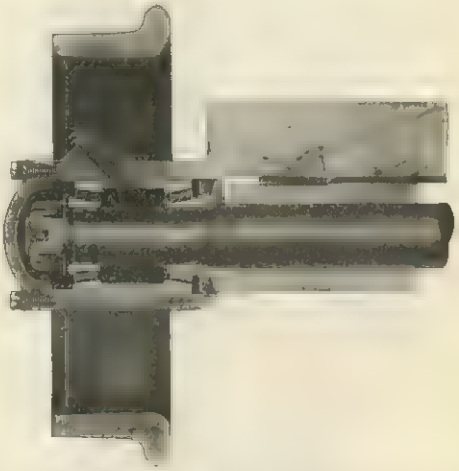
Built for Chicago, Wilmington & Franklin Coal Co.

5-Ton Steel Mine Car for Rotary Dump

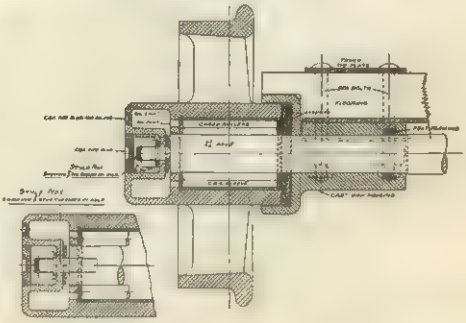
Length, Over-All .....12 ft. 6 ins.
Width, Over-All .....6 ft. ½ in.
Height, Over-All from Top of Rail.....3 ft. 6 ins.
Length, Inside .....10 ft. 4 ins.
Width, Inside .....5 ft. 10 ins.
Height, Inside .....2 ft. 4 ins.
Wheel Base .....48 ins.
Track Gauge .....42 ins.
Trucks .....16" Roller Bearing
Wheels with Self-Aligning Journal Boxes

Double flare car at mine of Turkey Gap Coal & Coke Co.

Double-flared cars are in common usage in all parts of the country and are a standard type. The one here pictured has steel sides and ends and an oak plank bottom. It is a low sided car with relatively large capacity. Length inside—10′ 0″; width inside—6′ 6″; height of sides above rail—2′ 6¾″; capacity—88 cu. ft. Built at Huntington shops.



Timken Equipped Mine Car Wheel. Hub closed at outer end with cast iron cap, conforming to recommendations of the bearing manufacturers.



Above illustration shows a new mine car wheel and the arrangement used for holding the wheels on the axles.

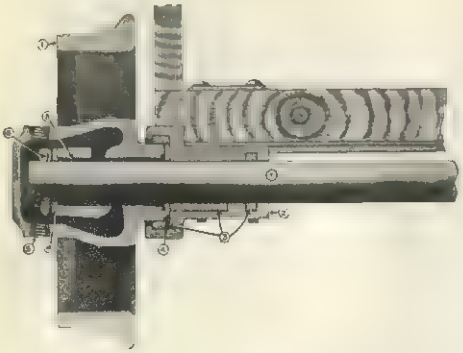


Illustration to left shows cross section of Closed Hub Self-Oiling Mine Car Wheel with bronze journal bearing. (Patented).

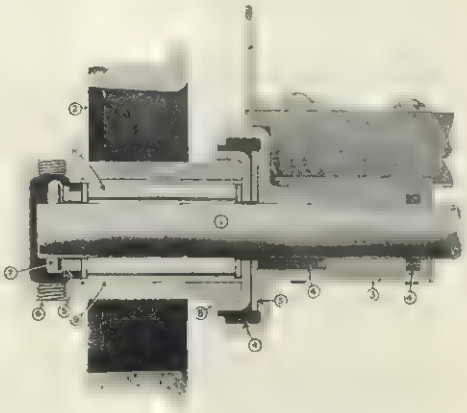
Description of Parts

1—Wheel.
2—Journal Box.
3—Packing.
4—Thrust Washers.
5—C. S. K. Pipe Plugs.
6—Bulb Cotter.
7—Axle.
8—Bronze Journal Bearings.

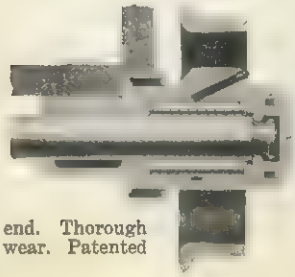
Illustration to right shows cross section of Closed Hub Solid (Caged) Roller Bearing Mine Car Wheel. (Patented).

Description of Parts

1—Axle.
2—Wheel.
3—Journal Box.
4—Packing.
5—Thrust Washers.
6—C. S. K. Pipe Plugs.
7—Bulb Cotters.
8—Pressed Steel Hub Cap.
9—C. R. S. Raceway.
10—C. R. S. Rollers.

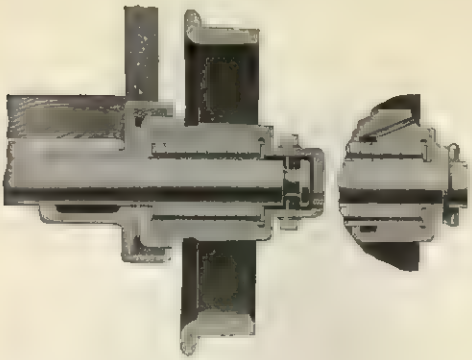


ROLLER BEARING WHEELS

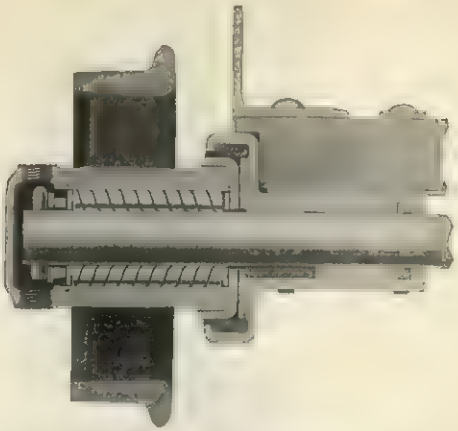


Roller Bearing Wheel, Hyatt Bearing, Hub capped at outer end. Thorough lubrication. Long wear. Patented July 13, 1920.

Channel Truck, applicable to wood or steel car.

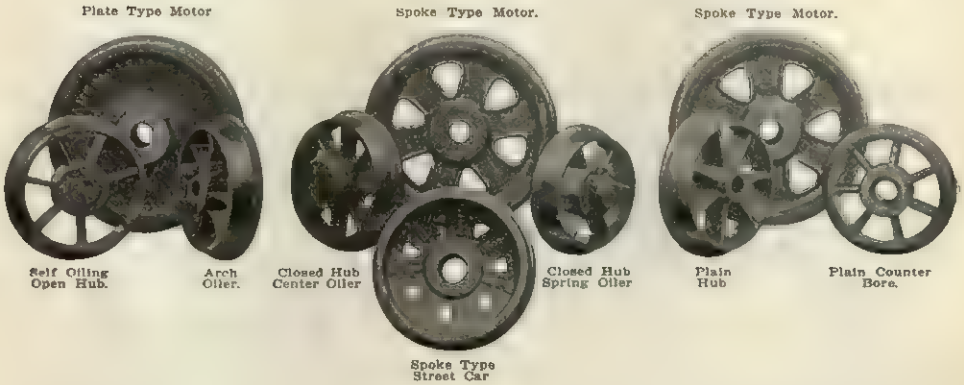


Roller Bearing Wheel, Hyatt Bearings. Hub closed at outer end and capped at inner end. Visible linch pin. Ample lubrication. Open hub with linch pin will be furnished if preferred. Patented October 30, 1917.



Roller Bearing Wheel, Hyatt Bearing. Hub closed at outer end and capped at inner end. The linch pin extends through axle, is well protected and is removable. Patented October 30, 1917.

CHILLED IRON WHEELS



Standard and special designs of chilled iron wheels for all types of mine equipment. Plain or self-oiling; open or closed hub; closed hub with visible linch-pin; roller bearing type and motor wheels.

The standard wheels throughout the world are chilled iron. Naturally, the accepted standard is our specialty, with the added improvements which many years of manufacturing experience have developed. Our own formula for wheel mixture assures long life as the result of excellent wearing qualities.

Foundry capacity 12000 to 15000 wheels per month.

Excellent facilities for refitting new wheels on old axles.

Our Engineering Department is at your disposal.

COMMUNITY PLATE

ADAM PATTERN

Bright Finish—50 Year Guarantee.

This exquisite design in Community Plate is inspired by the charming work of the eighteenth century decorators headed by the Adam Brothers.

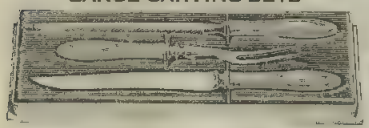
SMALL CARVING SETS

Steak, Fowl or Breakfast Service.

No. 10728—Small steak carving set, packed in blue velvet lined gift box. Weight, 11 ounces. Length of knife, 10 inches. Per pair.....$8.00

No. 10596—Small steak or game carving set, modeled handle stainless. Weight, 11 ounces. Length of knife, 10 inches. Per pair.....$6.00

LARGE CARVING SETS



For Large Roasts, Turkey, Etc.

No. 10725—Large beef carving set, packed in blue velvet lined gift box. Weight, 1 pound 14 ounces. Length of knife, 15 inches. Per set.....$16.00

GAME SHEARS

No. 10689—Game shears, packed one in blue velvet lined gift box. Weight, 14 ounces. Length, 10¼ inches. Per pair.....$10.00

HOLLOW HANDLE CHEESE SERVERS

No. 10815—Hollow handle cheese server, packed one in blue velvet lined gift box. Weight, 6 ounces. Length, 6½ inches. Per dozen.....$30.00

PICKLE FORKS

For Serving Pickles, Olives, Relishes, Etc.

No. 10646—Pickle fork, packed one in blue velvet lined gift box. Weight, 3 ounces. Length, 6⅝ inches. Per dozen.....$18.00

PIERCED SERVERS

For Serving Tomatoes, Pineapples, Cucumbers, Poached or Fried Eggs, Fritters, Waffles, Fish Cakes, Croquettes, Etc.

No. 10690—Pierced server, for tomatoes, poached eggs, etc. Packed one in blue velvet lined gift box. Weight, 5 ounces. Length, 7⅝ inches. Per dozen.....$36.00

LADLES

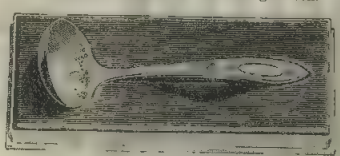
For Serving Salad Dressing, Whipped Cream and Pudding Sauces.

No. 10715—Salad dressing or cream ladle. Weight, 4 ounces. Length, 5¾ inches. Per dozen.....$24.00

For Deep Dish Serving of Gravy, Preserved Fruits, Sauces, Etc.

No. 10717 Gravy ladle. Weight, 7 ounces. Length, 6¾ inches. Per dozen.....$30.00

Packed one in blue velvet lined gift box.



For Serving Soups, Crushed Fruits, Etc.

No. 10721—Medium soup ladle, packed one in blue velvet lined gift box. Weight, 14 ounces. Length, 10⅝ inches. Per dozen.....$90.00

COMMUNITY PLATE

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COLD MEAT FORKS

For Serving Sliced Fowl, Cold Meat, Fish, Asparagus, Macaroni and Spaghetti. Also used with the Berry Spoon for Salad Serving.

No. 10667—Cold meat fork. Weight, 6 ounces. Length, 8⅝ inches. Per dozen.....$27.00

For Serving Sliced Fowl, Cold Meats, Sardines, Etc.

No. 10668—Small cold meat fork. Weight, 3 ounces. Length, 6⅛ inches. Per dozen.....$21.00

Packed one in blue velvet lined gift box.

BERRY OR SALAD SPOONS

For Serving from Casserole or Baking Dishes. Also used with the Cold Meat Fork for Salad Serving.

No. 10620—Berry or salad spoon. Weight, 10 ounces. Length, 9⅛ inches. Per dozen.....$40.00

For Serving from Casserole or Baking Dishes. Also used with Cold Meat Fork for Salad Serving.

No. 10647—Small berry or preserve spoon. Weight, 6 ounces. Length, 7¾ inches. Per dozen.....$30.00

Packed one in blue velvet lined gift box.

INDIVIDUAL SALAD FORKS

For Salad, French Pastry, Etc.

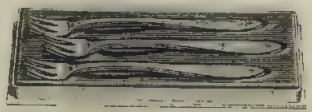
No. 10688—Individual salad forks. Weight, 12 ounces. Length, 6⅛ inches. Packed six in blue velvet lined gift box. Per dozen.....$14.00

OLIVE SPOONS

For Serving Olives, Pickles, Salted Nuts, Etc.

No. 10656—Olive spoon, packed one in blue velvet lined gift box. Weight, 3¾ pounds. Length, 5¾ inches. Per dozen.....$21.00

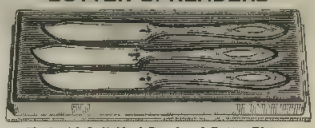
OYSTER FORKS



For Oysters, Clams, Lobster, Shrimp, Seafood, Cocktails, Etc.

No. 10679—Oyster forks, packed six in blue velvet lined gift box. Weight, 9 ounces. Length, 6⅛ inches. Per dozen.....$10.00

BUTTER SPREADERS



Used with Individual Bread and Butter Plates.

No. 10697—Butter spreaders, packed six in blue velvet lined gift box. Weight, 15 ounces. Length, 6¾ inches. Per dozen.....$12.00

THREE PIECE CHILD SETS

An Appropriate Gift for the Child.

No. 10735—Child's set (spoon, fork and H. H. knife). Weight, 8 ounces. Length of knife, 7⅛ inches. Per set.....$4.00

No. 10737 Same as above, with flat handle knife. Weight, 7 ounces. Length of knife, 7¼ inches. Per set.....$3.00

Packed in blue velvet lined gift box.

INDIVIDUAL PIE FORKS

No. 10660—Individual pie forks, packed six in blue velvet lined gift box. Weight, 12 ounces. Length, 7 inches. Per dozen.....$16.00

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COMMUNITY PLATE

ADAM PATTERN

Bright Finish—50 Year Guarantee.

ADD-A-PIECE CABINETS

Hand polished brown mahogany and richly lined in deep blue velvet.

Minimum of pieces can be purchased and added to cabinet from time to time.

"Add-a-Piece" Cabinets offer unusually attractive display features while the flexibilty of contents gives them an assured place of useful service in the home.

55-90 Cabinet Illustrated.

36- 60-Piece Cabinet with 45 pc contents (with H. H. Knives). Each....$75.00—With M. H. Knives . .$72.50
55- 90-Piece Cabinet with 72 pc contents (with H. H. Knives). Each....125.00—With M. H. Knives....118.00
100-200-Piece Cabinet with 140 pc contents (with H. H. Knives). Each....235.00—With M. H. Knives .221.00
200-300-Piece Cabinet with 255 pc contents (with H. H. Knives). Each....400.00—With M H. Knives. ..387.00

Any number of pieces can be arranged for in the chests listed above.

No. 102345 is 36-60 pc. with H. H. Knives.
No. 102346 is 36-60 pc. with M. H. Knives.
No. 60 is Empty Cabinet.

No. 102140 is 100-200 pc. with H. H. Knives.
No. 102141 is 100-200 pc. with M. H. Knives.
No. 219 is Empty Cabinet.

SUGGESTED ASSORTMENT

55 to 90 Piece Cabinet—72 Piece Contents.

12 Tea Spoons
6 Table Spoons
6 Dessert Spoons
6 Dessert Knives
6 Dinner Forks
6 Orange Spoons
6 Dessert Knives
6 Dessert Forks
6 Butter Spreaders
6 Salad Forks
1 Sugar Spoon
1 Butter Knife
1 Cold Meat Fork
1 Berry Spoon
1 Gravy Ladle
1 Olive Spoon

No. 102472—With H. H. Knives.....$125.00
No. 102473—With M. H. Knives.....118.00
No. 90—Empty Cabinet 38.00

26 Pc. Leatherette DeLuxe Chest.

STANDARD CHESTS

No. 10983—26 pc. Leatherette DeLuxe Chest with H. H. Dinner Knives. Each $37.00

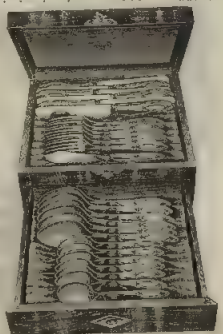
No. 10984—26 pc. Leatherette DeLuxe Chest with M. H. Dinner Knives. Each 33.00

No. 150—Seal Grain Leathrette DeLuxe Chest (Empty). Each..... 5.25

No. 10648—26 pc. Solid Mahogany Chest with drawer, Hollow Handle Dinner Knives. Each..... 39.00

No. 10947—26 pc. Solid Mahogany Chest with drawer, Modeled Handle Dinner Knives. Each..... 35.00

No. 148—Genuine Mahogany Chest with drawer (Empty). Each... 7.25



26 Pc. Genuine Mahogany Chest with Drawer.

COMMUNITY PLATE

ADAM PATTERN

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HOLLOW HANDLE KNIVES

No. 10611 Medium or table knife, packed six in roll in box. Weight, 1 pound 8 ounces. Length, 9¾ inches. Per dozen..... $21.00

No. 10612—Dessert or luncheon knife, packed six in roll in box. Weight, 1 pound 4 ounces. Length, 8¾ inches. Per dozen..... $20.50

No. 10704 Fruit knife, six in lined gift box. Weight, 1 pound. Length, 6⅝ inches. Per dozen.....$20.00

MODEL HANDLED KNIVES

No. 10615—Medium or table knife, packed six in racked box. Weight, 1 pound 9 ounces. Length, 9½ inches Per dozen..... $14.00

No. 10617 Medium or table knife, cimeter and swaged blades, packed six in racked box. Weight, 1 pound 9 ounces. Length, 9½ inches. Per dozen..... $14 20

No. 10616—Dessert or luncheon knife, packed six in racked box. Weight, 1 pound 5 ounces. Length, 8½ inches Per dozen..... $13.70

No. 10698 Fruit knife, packed six in racked box. Weight, 11 ounces. Length 6½ inches. Per dozen. $13.00

FORKS

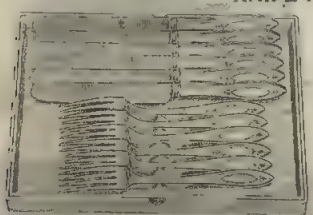
No. 10607—Medium flat fork, packed six in package in box. Weight, 14 ounces Length, 7½ inches. Per dozen..... $15.00

No. 10613—Medium hollow handle fork, packed six in roll in box. Weight, 1⅓ pounds. Length, 7¾ inches. Per dozen..... $21.00

No. 10606—Dessert flat fork, packed six in package in box. Weight, 11 ounces Length, 7 inches. Per dozen..... $14.50

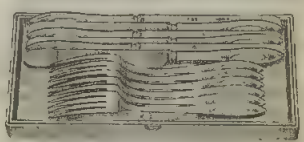
No. 10614 Dessert hollow handle fork, packed six in roll in box. Weight, 1¼ pounds. Length, 7¼ inches Per dozen..... $20.50

KNIFE AND FORK SETS



No 10742—Medium or table hollow handle knife and flat fork set. Weight, 2 lbs. 14 oz. Per set.....$18.00

No. 10743 Dessert hollow handle knife and flat fork set. Weight, 2 lbs. 8 oz. Per set.....$17.50

No. 10807—Medium hollow handle knife and hollow handle fork set Weight, 3 lbs. Per set.....$21.00

No. 10803—Medium or table modeled handle knife and flat fork set. Weight, 2 lbs. 9 oz. Per set... ..$14.50

No. 10982 Breakfast modeled handle knife and flat fork set. Weight, 2 lbs. 4 oz. Per set.....$14.10

All knife and fork sets are packed in brocade lined gift boxes. The corners of boxes are reinforced and the racks are well fastened.

COMMUNITY PLATE

ADAM PATTERN

Bright Finish—50 Year Guarantee.

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SUGAR SPOONS

Desirable for Jam, Jelly, Marmalade, Etc.

No. 10650B—Sugar spoon, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 5⅞ inches. Per dozen $15.00

BUTTER KNIVES

Butter Server, an Attractive Practical Gift.

No. 10695B—Butter knife, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 7½ inches. Per dozen $15.00

In set No. 10723; see page 2162A.

JELLY SERVERS

For Serving Jelly, Cheese, Honey, Etc.

No. 10623—Jelly server, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 6⅛ inches. Per dozen $18.00

BABY SETS

Especially designed to meet the requirements for Bread and Milk and Cereal Feasts.

No. 10738—Baby set (spoon and fork), in blue velvet lined gift box. Weight, 4 ounces. Per set.....$2.00

Also furnished with flat handle spoon.

SUGAR TONGS

No. 10708—Sugar tongs, packed one in blue velvet lined gift box. Weight, 3 ounces. Length, 4½ inches. Per dozen $18.00

HOLLOW HANDLE PIE SERVERS

For Serving Pie, Brick Ice Cream, Cake, Etc.

No. 10710—Hollow handle pie or ice cream server, packed one in blue velvet lined gift box. Weight, 8 ounces. Length, 10⅜ inches. Per dozen.....$48.00

CAKE OR BREAD KNIVES

No. 10989—Cake or bread knife, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 11⅝ inches. Per dozen $48.00

CAKE OR PASTRY FORKS

No. 10990—Cake and pastry serving fork, packed one in blue velvet lined gift box. Weight, 3 ounces. Length, 8¼ inches. Per dozen.....$30.00

CAKE SERVING SETS

No. 10791—Cake Knife and Cake Fork in blue lined box. Weight, 8 ounces. Per set.....$6.50

BABY SPOONS

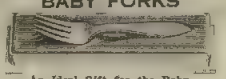
No. 10624—Baby spoon (straight handle). Weight, 2 ounces. Length, 4 inches. Per dozen.....$12.00

Especially designed to meet the requirements for Bread and Milk and Cereal Feasts.

No. 10619—Baby spoon (curved handle. Weight, — ounces. Per dozen.....$12.00

Packed one in blue velvet lined gift box.

BABY FORKS



An Ideal Gift for the Baby.

No. 10628—Baby fork, packed one in blue velvet lined gift box. Wt., 2 ozs. Length, 4 in. Per dozen. $12.00

2160

COMMUNITY PLATE

ADAM PATTERN

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SPOONS

No. 10602—Teaspoons, packed six in package in box. Weight, 9 ounces. Length, 6 inches. Per dozen...$7.50
No. 10603—Dessert spoons, packed six in package in box. Weight, 12 ounces. Length, 7⅛ inches. Dozen..$14.50
No. 10605—Table spoons, packed six in package in box. Weight, 1 pound. Length, 8¼ inches. Dozen...$15.00
No. 10604—Soup spoons, packed six in package in box. Weight, 13 ounces. Length, 7½ inches. Dozen..$15.00

COFFEE SPOONS

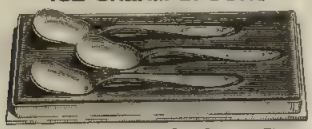
For Small Cup Service (Demi Tasse).

No. 10625—Coffee spoons, packed six in blue velvet lined gift box. Weight, 6 ounces. Length, 4½ inches. Per dozen $7.50

For Tea, Sherbets, Ices, Sundaes, Etc.

No. 10601—5 o'clock teaspoons, packed six in blue velvet lined gift box. Weight ¾ pounds. Length 5⅛ inches Per dozen $7.50

ICE CREAM SPOONS



For Sundaes, Sherbets, Ices, Desserts, Etc.

No. 10657—Ice Cream or Sundae spoons, packed six in blue velvet lined box. Weight, 10 ounces. Length, 5½ inches. Per dozen $11.00
No. 10483—Jam Spoon, packed one in velvet lined box. Weight, per dozen, 2¼ lbs. Per dozen....$15.00

ORANGE SPOONS

For Oranges, Grapefruit, Melons, Etc.

No. 10641—Orange spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 5⅝ inches. Per dozen $11.00

BUTTER KNIFE AND SUGAR SPOON

An Attractive Practical Gift.

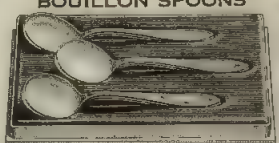
No. 10729—Butter knife and sugar spoon set, in blue velvet lined gift box. Weight, 7ounces. Per set..$2.50

For price of butter knife and sugar spoon priced separately, see page 2163. (Butter knife 10695B; sugar shell, 10650B.)

CAKE SERVERS

No. 10484—Pierced cake servers, packed one in a blue velvet lined gift box. Length, 10¾ inches; weight, each, 10 ounces. Per dozen.....$48.00

BOUILLON SPOONS



For Bouillon, Consomme and Soups when served in cups.

No. 10622—Bouillon spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 4⅞ inches. Per dozen $14.00

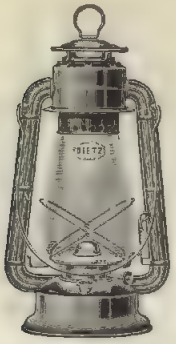
ICED TEA SPOONS

For Iced Tea and Coffee, Chocolate, Lemonade and Highballs.

No. 10629—Iced tea spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 7⅛ inches. Per dozen $12.00

DIETZ TUBULAR LANTERNS

Junior and Short Globe Styles—Cold Blast FOR KEROSENE

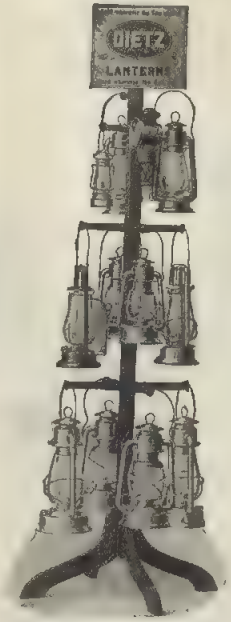


No. 23.

Junior—Cold Blast. Most Popular Small Lantern Made. 12 inches high, 8 C. Power. Extra quality tin plate. Beaded Reinforced Tubes. Domed Well, Security Standing Bail, Positive Locking Lever Lift, No-Leak Filler Cap, Steel Wing Lock Burner, ⅝ Inch Wick, Junior Globe. Fount holds 1 pint of kerosene. Burns 15 hours.

No. 23—Bright Tin, Plain Globe
.....Per Dozen, $17.00

Packed—One Dozen in a Case.



Display Stand.

Assortment No. 12—A sightly display fixture for the Store floor that sells more lanterns. Dietz Display Stand No. 12 is made of fumed oak. Its Total Height is 70 inches, Spread of Base, 29 inches. **Furnished** complete with one each of the following 12 Dietz Lanterns: "Junior," "Sport," "Eureka Driving," "Junior Wagon," "Buckeye Dash," "Little Wizard," Tin "Little Wizard," Brass Fount and Top; "Monarch," "No 2 Blizzard," "No. 2 Large Fount Blizzard," "No 2 D-Lite," "No. 2 Large Fount D-Lite."

No. 12—Display Stand with above 12 Lanterns
.....Per Assortment, $32.00

Packed—Each Assortment in a Shipping Case

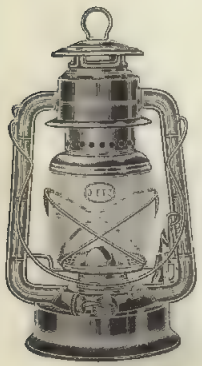
Nos. 723 and 725

Little Wizard—Cold Blast. Small Short Globe Lantern, 11½ inches high, 6C Power Extra Quality Tin Plate, Beaded Reinforced Tubes, Domed Well, Security Standing Bail, Lever Globe Lift, Wired No-Leak Filler Cap, Wing Lock Steel Burner, ⅝ Inch Wick, Little Wizard Lock-Nob Short Globe. Fount holds 1⅛ pints of kerosene. Burns 30 hours

No. 723—Bright Tin, Plain Globe
.....Per Dozen, $17.00

No. 725—Bright Tin with Brass Fount and Top....Per Dozen, 28 00

Packed No. 723—One Dozen in a Case
Packed No. 725—Quarter Dozen in a Case.



No. 775

Nos. 780 and 880.

D-Lite No. 2—Cold Blast. Short Globe. 13¼ inches high 10 C. Power, Extra Quaitiy Tin Plate, Beaded Reinforced Tubes, Domed Well, Security Standing Bail Lever Lift with Braced Lift Guide, Wired No-Leak Filler Cap, Wing Lock Steel Burner, **One Inch** Wick. **D-Lite Loc-Nob Short Globe.** Fount holds 1¼ pints of kerosene.

No. 775—Bright Tin, **Plain Globe**....Per Dozen, $26.00

Packed—Half Dozen in a Case.

D-Lite No. 2 "Large Fount"—Cold Blast, Short Globe. 13¾ inches high, 10 C. Power. Extra Quality Tin Plate, Beaded Reinforced Tubes, Domed Well Security Standing Bail. Lever Lift with Braced Lift Guide, Wired No-Leak Filler Cap, Wing Lock Steel Burner, **One Inch** Wick. D-Lite Loc-Nob Short Globe. Fount holds 2¾ pints kerosene. Burns 35 hours.

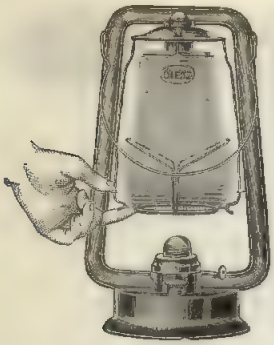
No. 780—Bright Tin, **Plain** Globe...Per Dozen, $28.50
No. 880—Bright Tin, with **Brass** Fount and Top
..... Per Dozen, 39.50

Packed Half Dozen in a Case

DIETZ TUBULAR LANTERNS

Large Size—High Globes
Hot Blast and Cold Blast

FOR KEROSENE



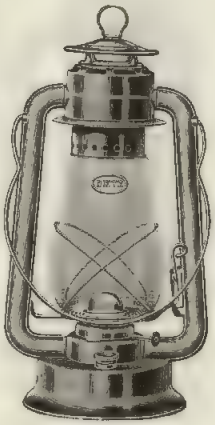
Nos. 10 and 10R

Hy-lo—Hot Blast 13¼ inches high, 4 C. Power. Very Sturdy Construction with Simple Direct Lift. Extra Quality Tin Plate Double Seamed Solderless Fount Steel Burner, ⅝ Inch Wick, Blizzard-Fitzall Loc-Nob Globe. Fount holds 1¼ pints of kerosene. Burns 20 hours.

No. 10 —Bright Tin, Plain Globe
.....Per Dozen, $15.00

No. 10R—Bright Tin, Ruby Globe
.....Per Dozen, 19.00

Packed—One Dozen in a Case.



Nos. 265 and 265R

Crescent No. 2 Cold Blast. 15 inches high, 10 C. Power. Extra Quality Tin Plate, Smooth Round Tubes. Flat Fount, Security Standing Bail, Positive Locking Lever Lift, No-Leak Filler Cap, Wing Steel Burner **One Inch** Wick, Blizzard-Fitzall Loc-Nob Globe. Fount holds 1¼ pints of kerosene. Burns 20 hours.

No. 265 —Bright Tin, Plain
Globe ... .Per Dozen, $24.00

No. 265R—Bright Tin, Ruby
Globe .....Per Dozen. 28.00

Packed—Half Dozen in a Case.

Nos. 17 and 17R

Monarch—Hot Blast 13½ inches high, 4 C. Power. Extra Quality Tin Plate, Dome Fount, Beaded Reinforced Tubes, Security Standing Bail, Positive Locking Lever Lift, No-Leak Filler Cap, Wing Lock Steel Burner, ⅝ Inch Wick, Blizzard-Fitzall Loc-Nob Globe. Fount holds 1⅛ pints of kerosene. Burns 20 hours.

No. 17 —Bright Tin, Plain Globe
.....Per Dozen, $16.00

No. 17R—Bright Tin, Ruby Globe
.....Per Dozen, 20 00

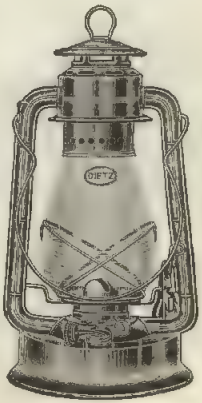
Packed—One Dozen in a Case.

Nos 275 and 275R

Blizzard No. 2 Cold Blast. 14¾ inches high. 10 C. Power. Extra Quality Tin Plate. Beaded Reinforced Tubes, Dome Fount, Positive Locking Lever Lift, with Reinforced Lift Guide. Wired No-Leak Filler Cap, Wing Lock Steel Burner. **One Inch** Wick. Blizzard-Fitzall Loc-Nob Globe. Fount holds 1½ pints of kerosene. Burns 20 hours.

No. 275 —Bright Tin, Plain Globe. Per Dozen, $26.00
No. 275R—Bright Tin, Ruby Globe. Per Dozen, 30.00

Packed—Half Dozen in a Case.



No. 475

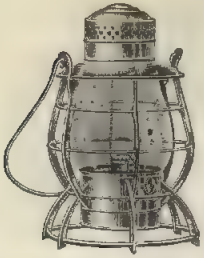
Blizzard No. 2 "Large Fount"—Cold Blast. 15 inches high, 10 C. Power. Extra Quality Tin Plate. Beaded Reinforced Tubes, Dome Fount, Positive Locking Lever Lift with Reinforced Lift Guide, Wired No-Leak Filler Cap, Wing Lock Steel Burner, **One Inch** Wick, Blizzard-Fitzall Loc-Nob Globe. Fount holds 2¾ pints of kerosene. Burns 35 hours

No. 475—Bright Tin, Plain Globe....Per Dozen, $28 50

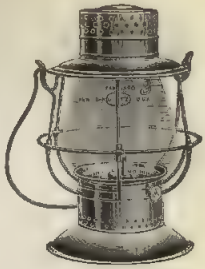
Packed—Half Dozen in a Case.

DIETZ SPORT LANTERN RAILROAD AND MILL LANTERNS

KEROSENE AND SIGNAL OIL



No. 49

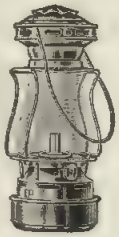


Nos. 39W and 39R

Watchman's Mill Lantern, 10½ inches high, made with a substantial Cold Rolled Steel Frame. This Lantern Burns Signal Oil, which makes it useful where Kerosene is prohibited. It may be padlocked, after being lighted, to prevent careless exposure of the flame by the watchman. An outside Wick Raiser regulates the flame operating also a practical Wick Scraper, which removes char. Further equipped with Wick Scraper Ratchet Burner, Vulcan Globe. Has an inside Oil Pot. Burns 24 Hours (Signal Oil.)

No. 49—Cold Rolled Steel Frame Enameled Red, **Plain** Globe..... ..... Per Dozen, $44.00

Packed One Dozen in a Case.

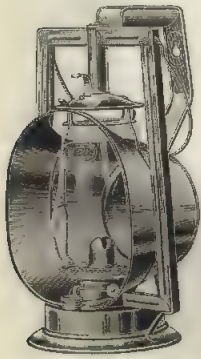


No. 8 Sport.

Standard Railroad Lantern, 10 inches high. Burns Signal Oil. Made with a Solid Metal Bell Bottom. Has Substantial Round Wire Guards to protect the Globe, and a hinged Top. Fitted with Extra Special Ratchet Burner, Outside Wick Raiser, 1 inch Wick, Vulcan Globe. Burns 24 Hours (Signal Oil). Kerosene Oil may be used by substituting ⅝ inch Wick and Special Convex Burner.

No. 39W—Bright Tinned Steel (Redipped), **Plain** Globe..Per Dozen, $29.50
No. 39R—Bright Tinned Steel (Redipped), **Ruby** Globe...Per Dozen, 33.50

Packed—One Dozen in a Case.



No. 85.

Sport Lantern. Smallest practical hand lantern made. Very popular among hikers, campers and sportsmen. Adds no burden when slung on a shoulder pack because it is only 7½ inches high and weighs but one pound, filled with oil. Also fits into an automobile tool box, suitcase or traveling bag. This lantern has the strength of construction of a large lantern It is fitted with Patented Burner, ⅝ inch Wick, Sport Globe. Fount carries Kerosene Oil for 10 Hours' Continuous Burning.

No. 8—Bright Tin, **Plain** Globe....Per Dozen, $12.00

Packed—One Dozen in a Case.

QUICK-LITE LANTERNS

No. LQ327.

Acme Inspector's Railroad Lantern, **Hot Blast,** for Kerosene, 15½ inches high. Frame and Hood heavily braced. Tubes Bead Re-inforced. Delivers a very bright light, 20 C. Power. Additional features are Security Standing Bail, Heat Proof Stationery Handle with Hang-up Slot, 5 inch Silvered Glass Reflector, No. 2 Blizzard-Fitzall Globe Burns 20 Hours (Kerosene).

No. 85—Bright Tinned Steel, **Plain** Globe.... ..... Per Dozen, $46.00

Packed—Half Dozen in a Case.

Coleman Quick-Lite "Gasoline Lanterns"

Burn their own Gas, which is made from Gasoline as it is consumed by the lanterns in use. The light furnished is white and bright. Mica Chimney, Two Mantles, Fount holds 1 quart, burns about 12 hours. Lights with a common match.

No. LQ327 Nickel Plated Brass.....Each, $7.50

Packed—One in a Carton, Twelve in a Case.

DIETZ GLOBES AND BURNERS

Nos. OW, OR and OG.

Nos. 2W and 2R.

Dietz Patented Loc-Nobs on a Globe prevent the Globe from slipping out of the retaining wires and breaking.

Nos. 5LKW and 5LKR.

Nos. 6LKW and 6LKR.

Nos.	OW (Plain)	OR (Ruby)	OG (Green)
Tubular . Per Doz.,	$2.00	5.40	7.25

Dietz Blizzard—Fitzall "Loc-Nob" Globes

A New Standardized First Quality High Globe designed for use on all Dietz Lanterns that formerly used either Blizzard or Tubular Globes.

Fits Dietz Monarch and Hy-Lo Hot Blast Lanterns, also No. 2 Crescent, No. 2 Blizzard and No. 2 Large Fount Blizzard Cold Blast Lanterns together with Underwriter's Mill Lantern, Acme Inspectors' R. R. Lantern and Buckeye Dark Lantern. Dimensions: Height 6 1/16 inches, Diameter Top 2 15/16 inches, Diameter Bottom 3 1/16 inches.

No. 2W—Plain Glass ..... **Per Dozen, $2.30**

No. 2R—Ruby Glass, Solid Color .. **Per Dozen, 6.00**

Little Wizard Loc-Nob—First Quality Dietz Selected Short Globe. Wide Openings make Cleaning easy. Designed for No. 723 Little Wizard Lantern. Dimensions: Height 3 15/16 inches, Diameter Top 3 1/4 inches, Diameter Bottom, 2 7/16 inches.

No. 5LKW—Plain Glass ..... **Per Dozen, $2.30**

No. 5LKR Ruby Glass, Solid Color Per Dozen, 5.40

D-Lite Loc-Nob—First Quality Selected Short Globe. Wide Openings make Cleaning easy. Fits Nos. 775, 780 and 880 D-Lite Lanterns. Dimensions: Height 4 5/8 inches, Diameter Top 4 1/16 inches, Diameter Bottom 3 1/16 inches.

No. 6LKW—Plain Glass ..... **Per Dozen, $2.60**

No. 6LKR—Ruby Glass, Solid Color Per Dozen, 6.50

Packed—Five Dozen in a Case.

No. 23W and 23R.

Nos. 39W, 39R and 39G.

First Quality Globes without imperfections.

Junior—Fits Dietz "Junior" Hand Lantern and "Junior" Wagon Lantern. Dimensions: Height 5 1/8 inches, Diameter Top 2 5/8 inches, Diameter Bottom 2 13/16 inches.

No. 23W—Plain Glass ..... **Per Dozen, $2.30**

No. 23R Ruby Glass, Solid Color... Per Dozen, 5.40

Vulcan—Fits Dietz Standard (No. 39) Railroad Lantern, also Watchman's Mill Lantern. Dimensions: Height 5 7/16 inches, Diameter Top 2 1/4 inches, Diameter Bottom 3 1/4 inches.

No. 39W—Plain Glass ..... **Per Dozen, $3.10**

No. 39R Ruby Glass, Solid Color. Per Dozen, 6.40

No. 39G—Green Glass, Solid Color.. Per Dozen, 7.80

Packed Five Dozen in a Case.

No. 327.

No. 8W.

No. 327—Mica Chimney for No. L.Q. 327 Quick-Lite Lanterns ..... **Each, $0.90**

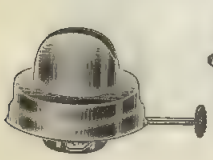
Sport (Formerly Scout)—A Sturdy Little Globe of First Quality Selected Glass. Designed for Dietz Sport Lantern. Dimensions: Height 3 7/16 inches, Diameter Top 1 3/4 inches, Diameter Bottom 2 1/8 inches.

No. 8W—Plain Glass ..... **Per Dozen, $1.50**

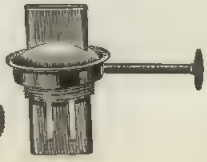
No. 8R—Ruby Glass ..... **Per Dozen, 4.00**

Packed—One Dozen in a Case.

LANTERN BURNERS



Nos. 401 and 262.



No. 1

LAMP BURNERS

Hinged Cone.

No. 2293-1—Takes 5/8 inch Wick....Per Dozen, $1.70

No. 2294-2—Takes 1 inch Wick....Per Dozen, 2.00

Packed One Dozen in a Box

No. 401—Dietz Plain Cone Steel Burner for 5/8 inch Wick. Substitute for regular burner on Hy-Lo and "Underwriter's" Mill Lantern..... **Per Dozen, 1.50**

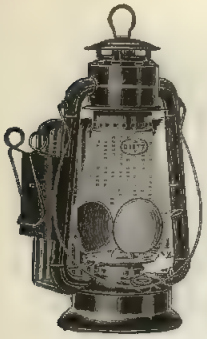
No. 262—Dietz Wing-Lock Cone Steel Burner for 1 inch Wick. Fits No. 2 Crescent, No. 2 Blizzard, No. 2 Large Fount Blizzard, No. 2 D-Lite, No. 75 Wall and No. 100 Beacon Wall Lanterns.....**Per Dozen, 2.50**

No. 1—Extra Special Ratchet Brass Burner for 1 inch Wick. Used on Dietz Standard (No. 39) Railroad Lanterns ..... **Per Dozen, 2.40**

Packed—One Dozen in a Carton.

DIETZ VEHICLE AND WALL LANTERNS

FOR KEROSENE



No. 25.

Flat Bracket

Junior Wagon, Cold Blast. A finely made Vehicle Lantern 12 inches high, 10 C. Power. Fitted with 2¼ inch Ruby Rear Lens, which complies with traffic laws, also Bulls eye Lens with Attachment. Made of Extra Quality Tin Plate. Has Dome Fount, Strong Lever Globe Lift, No-Leak Filler Cap, Wing Lock Steel Burner, ⅝ inch Wick, Junior Globe and Corrugated Reflector Furnished Right or Left Hand, complete with Flat Bracket. Fount Holds 1 Pint of Kerosene. Burns 15 Hours.

No. 25—Enameled Black, **Plain** Globe, with Bull's-eye Attachment. ..... Per Dozen, $34.50

Note.—Specify for Right or Left Hand.

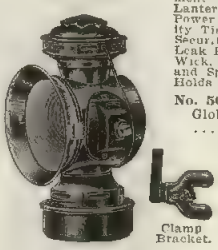
Packed—Half Dozen in a Case

No. 50.

Buckeye Dash—Hot Blast, with Corrugated Reflector, Plain Globe and Bulls-eye Attachment. Useful also as a Wall Lantern. This Lantern is 13¾ inches High and reflects a 10 C. Power light on the road. Made of Extra Quality Tin Plate and equipped with Dome Fount, Security Standing Ball Locking Lever Lift, No Leak Filler Cap, Patented Steel Burner, ⅝ Inch Wick, Blizzard Fitzall Globe, Bulls-Eye Lens and Spring Clip for Dash Attachment. Fount Holds 1½ Pints of Kerosene. Burns 30 Hours.

No. 50—Enameled Black, **Plain** Globe with Bull's-eye Attachment. ..... Per Dozen, $28.00

Packed—Half Dozen in a Case.



Clamp Bracket.

No. 55 Eureka.

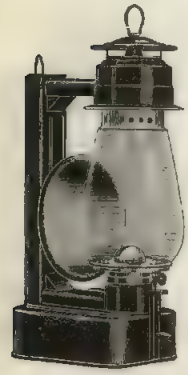
EUREKA DRIVING AND MOTOR PARKING LANTERN

A highly dependable, small Driving Lantern. 7¼ inches high. Also used extensively as a Motor Parking Lamp to save battery current. Made of Cold Rolled Steel, with Positive-Locking Oil Fount. Equipped with 3⅛ inch White Door Lens and law abiding 2¼ inch Ruby Rear Lens. Patented Steel Burner and ⅝ inch Wick. Holds Kerosene Oil Supply for 10 Hours. Furnished with Screw Clamp Holder.

No. 55—Eureka, Enameled Black with Nickel Plated Door Rim, **Plain** Globe...Per Dozen, $38.00

Note.—Specify for Right or Left Hand.

Packed—One in a Carton; One Dozen in a Case

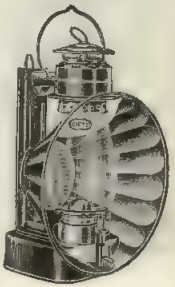


No. 75.

Wall Lantern. A Cold Blast Side Wall Lantern of high candle power and manifold usefulness. It is 15 inches high and delivers a light of 30 C. Power. Made of Extra Quality Tin Plate. Equipped with 6 inch Silvered Glass Reflector, Patented Steel Burner, **One Inch** Wick, Blizzard-Fitzall Globe and Outside Filler Cap. Fount Holds 2 Quarts of Kerosene. Burns 35 Hours.

No. 75—Enameled Green, **Plain** Globe..... ..... Per Dozen, $57.00

Packed—Half Dozen in a Case.



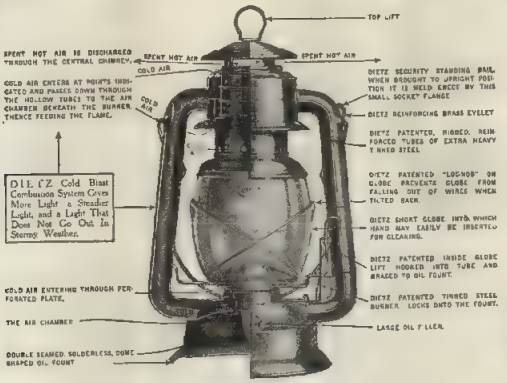
No. 100

Beacon Wall Lantern for Indoor or Outdoor use. High Powered **Cold Blast** Light—50 C. Power. The Beacon is 15¼ inches high, made of Extra Quality Tin Plate and equipped with a White Enameled Concentric Corrugated Hood Reflector, Patented Steel Burner, **One Inch** Wick, Blizzard Fitzall Globe and Outside Filler Cap. Fount Holds 1⅝ Quarts of Kerosene. Burns 35 Hours.

No. 100—Enameled Green, **Plain** Globe..... ..... Per Dozen, $63.00

Packed—Quarter Dozen in a Case.

Why Dietz "Cold Blast" Lanterns Give 100% More Light


TOP LIFT
SPENT HOT AIR IS DISCHARGED THROUGH THE CENTRAL CHIMNEY.
SPENT HOT AIR
SPENT HOT AIR
COLD AIR
COLD AIR ENTERS AT POINTS INDICATED AND PASSES DOWN THROUGH THE HOLLOW TUBES TO THE AIR CHAMBER BENEATH THE BURNER, THENCE FEEDING THE FLAME.
COLD AIR
DIETZ Cold Blast Combustion System Gives More Light a Steadier Light, and a Light That Does Not Go Out In Stormy Weather.
DIETZ SECURITY STANDING BAIL WHEN BROUGHT TO UPRIGHT POSITION IT IS HELD ERECT BY THIS SMALL SOCKET FLANGE
DIETZ REINFORCING BRASS EYELET
DIETZ PATENTED, RIVETED, REINFORCED TUBES OF EXTRA HEAVY TINNED STEEL
DIETZ PATENTED "LOCK-NOB" ON GLOBE PREVENTS GLOBE FROM FALLING OUT OF WIRES WHEN TILTED BACK
DIETZ SHORT GLOBE INTO WHICH HAND MAY EASILY BE INSERTED FOR CLEANING.
DIETZ PATENTED INSIDE GLOBE LIFT HOOKED INTO TUBE AND BRACED TO OIL FOUNT
DIETZ PATENTED TINNED STEEL BURNER, LOCKS INTO THE FOUNT.
LARGE OIL FILLER
COLD AIR ENTERING THROUGH PERFORATED PLATE.
THE AIR CHAMBER
DOUBLE SEAMED SOLDERLESS, DOME SHAPED OIL FOUNT

DIETZ "COLD BLAST" LANTERNS

Showing How Pure Air Only Feeds the Flame

Kerosene is a gas oil. It vaporizes with heat and becomes a burnable mixture only when blended with oxygen from the air.

The term "Cold Blast" as applied to a Dietz Lantern means that fresh air only is fed to the flame at the wick, also that all spent or burned air is expelled absolutely from the Lantern, and is not re-circulated again as it is in "Hot Blast" Lanterns.

There is a steady circulation of fresh air and expulsion of spent air in a Dietz "Cold Blast" Lantern, when burning, as there is through the lungs of the human body, when breathing. The above diagram gives a very clear idea of the circulation of air through a Dietz "Cold Blast" Lantern, showing how fresh air enters at the top of the tubes, passes to the bottom and breathes into the flame at the wick.

By permitting only fresh air, fully charged with oxygen, to reach the flame in a Dietz "Cold Blast" Lantern, a more brilliant, whiter light is obtained. The candle power of this light is double that obtained from any "Hot Blast" Lantern.

Where extra lighting power is desired Dietz *Cold Blast* Lanterns should be recommended to customers. Where power of illumination is not a condition of sale Dietz *Hot Blast* Lanterns will give reliable service at somewhat lower cost.

All Dietz "Cold Blast" Lanterns Have Special Features as Follows:

Dietz Security standing bail; patent brass eyelets, patent safety burner; patent positive locking globe lift, large oil filler with wired filler cap and double seamed solderless oil fount. Where needed to protect the lift mechanism from strain these lanterns have specially braced lift-guides.

ERIE STEAM SHOVEL CO.

Incorporated 1883—Formerly Ball Engine Co.

ERIE, PA., U. S. A.

Branch Offices:

BOSTON NEW YORK PHILADELPHIA PITTSBURGH ATLANTA CHICAGO

Representatives Throughout the United States

ERIE Steam Shovels and Locomotive Cranes

Very Useful Around Any Coal Mine

In addition to mining coal with shallow cover, and outcrop coal, the ERIE Shovel is very useful around a deep-seam mine too. It builds roads and railroads; opens drifts; excavates cellars and house sites; stores coal in piles, and reloads; digs trenches; serves for dredging and ditching; reclaims pillar coal.

ERIE SHOVEL STRIPPING COAL

Profitable Coal Mining by the Strip-Pit Method

By means of the ERIE Shovel, many coal operators have been able to reap the large per-ton profits of strip-pit mining, with a total plant investment of little more than $10,000.

The top photo (at the right) shows an economical open-pit mining operation. Average cost of removing overburden, about 10c per cubic yard. Stripping cost per ton of coal, about 30c.

The value of the ERIE Shovel for strip-pit mining is suggested by the following letter:

"Our ERIE is being used for coal stripping, and a large portion of the overburden is rock. There is no other shovel but the ERIE that will handle the yardage at so low a cost for upkeep. We are very well pleased with our ERIE."—Albro Martin, Albro Martin Coal Co., Clarksville, Ark.

There are many ERIE Shovels being used for stripping work. One concern alone operates 22 ERIES—The Philadelphia and Reading Coal & Iron Co., Pottsville, Pa.

LOADING OUT STRIPPED COAL

Speedy Loading of Stripped Coal

In loading out stripped coal with an ERIE Shovel there is no difficulty in getting large output—usually the problem is to haul away the coal. The capacity of the ERIE Shovel is suggested by the photo below, at the left, showing an ERIE loading out coal after a 300-ton stripper.

The same shovel which is used for stripping can also run back to load the coal, at a cost of about 15c a ton. The total mining cost of the coal, stripped and loaded into cars, is often less than 50c a ton.

Handling Storage Coal as a Locomotive Crane

Every ERIE Shovel is quickly and easily convertible to a Locomotive Crane.

Timothy Burke, Inc., Scranton, Pa., write: "We have used the ERIE both as shovel and as crane handling clamshell bucket, and it stands in a class by itself. The ERIE is superior to any other machine we have seen—upkeep has been so small it is scarcely worth mentioning."

Moves any bulk material; or handles a dragline or orangepeel bucket as well as a clamshell, giving splendid results in ditching and deep trench digging.

The ERIE Crane shown below is used to pile coal for storage; also to reload the coal into cars and trucks. It is equipped with the ERIE **Lubricated** caterpillar type mounting. This mounting has unequalled climbing power and traveling ability.

PILING COAL FOR STORAGE ON ERIE **LUBRICATED** CATERPILLAR TYPE MOUNTING

We Would Like to Send You Our Bulletins

Showing just what the ERIE Shovel can do on coal stripping and loading. Also some photos showing the wide usefulness of the ERIE around the mine. **Write for Bulletins S-72-16-30-60.**

BUCYRUS COMPANY

SOUTH MILWAUKEE, WISCONSIN

Branch Offices

NEW YORK—[illegible]
CHICAGO—Room [illegible] 31 South La Salle Street.
PITTSBURGH—[illegible] Jenkins Arcade Building
SAN FRANCISCO—[illegible] California Street
CLEVELAND—605 Perry Block.
LONDON—Iddlesleigh House, Caxton St., Westminister.
TOKYO—Imperial Hotel

Representatives

DENVER—H. N. Steinbarger Company.
BUTTE, MONT.—D. Caldwell Company
SALT LAKE CITY—F. C. Stannard Company
ST. PAUL—Borchert-Ingersoll, Inc

Products

Coal Stripping and Loading Shovels—Railroad Type Shovels—Revolving Shovels—Dragline and Clamshell Excavators—Trench Excavators—Levee Building Machines—Dipper and Hydraulic and Elevator Dredges—Placer Dredges for Gold, Tin and Platinum Mining Spreader Plows—Unloading Plows—Railway Wrecking Cranes

Large Revolving Shovels

This company builds four sizes of large revolving shovels of the coal stripping type, as listed below.

The 320-B, the largest of these, is the most recent development in this type of shovel and embodies all the latest improvements. It is built for continuous service under the most severe conditions. Among its outstanding and exclusive features are a box-girder type boom and outside dipper sticks, and a one part hoist. This combination helps to give this shovel a greater digging speed than any other shovel of this size built. It will dig a box cut 30 feet in depth with spoil deposited on one side; when spoil may be put on both sides, nearly 40 feet deep, and side cuts from 45 to 50 feet in depth. It may be had with dragline equipment and is operated either by steam or electric power.

The 175-B will dig box cuts 30 feet deep and side cuts up to 40 or 45 feet in depth. It may be had with steam or electric power.

The 150-B carries box cuts about 20 feet deep and will strip 25 to 30 feet under ordinary conditions.

The 80-B is the largest revolving shovel built, which is mounted on caterpillars, which adds to its mobility and general usefulness and in many instances gives it a greater effective output than a considerably larger shovel. Under average conditions it will carry cuts up to 17 feet deep. This shovel may be had as a dragline excavator and is driven either by electricity or steam and may be mounted on caterpillars or trucks.

320-B Steam Shovel

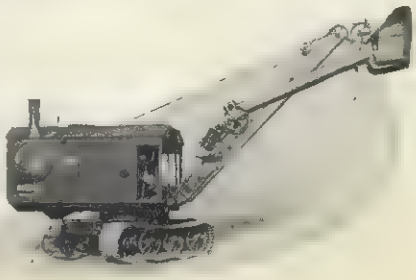
80-B Steam Shovel Mounted on Caterpillars

	80-B	150-B	175-B	320-B	
Length of Boom	41'6"	60'0"	75'0"	85'0"	
Length Dipper Handle	26'0"	38'0"	48'0"	54'0"	
Dipper (Level), C. Yd.	2½	3½	6	7½	
Dipper (Heaped), C. Yd.	3½	4½	7½	9½	
Maximum Dumping Height	29'0"	42'0"	52'0"	61'0"	61'0"
Maximum Dumping Radius	42'6"	74'0"	87'6"	94'0"	94'0"
Maximum Level Floor	53'0"	92'0"	112'0"	118'0"	118'0"

Small Revolving Shovels

For coal loading each size of small revolving shovel may be had with a special coal loading dipper. The 50-B, because of the wide cut it can carry and height of its lift, which enables it to load cars on the surface of the coal, is recommended for use in conjunction with the 320-B or 175-B stripping shovel. It is the only small revolving shovel to have a locomotive boiler. The size of the coal loading dippers with which it may be equipped are given in the table below. The 30-B and 20-B shovels are very generally used for service in anthracite, bituminous and lignite coal mines.

For the unusual conditions that exist in certain districts where the coal vein is intersected by ridges of fire clay, a special 30-B is offered with horizontal



50-B Steam Shovel

20-B High Lift Shovel in a Pennsylvania Anthracite Mine

crowd equipment, which enables the coal to be separated from the clay and picked up cleanly without piling up a ridge just out of reach of the dipper.

The small revolving shovels listed below may be had with high lift, dragline, clamshell or crane equipment in addition to standard shovel equipment, and are readily convertible from one to the other in the field. They may also be operated by steam engines, electric motors, gasoline or Diesel oil engines.

The dimensions given in the table below are for steam machines only. Space does not permit inclusion of data relative to gasoline, oil or electric small revolving shovels. In general, however, the working dimensions are similar to the steam machines.

Boom	18'0"	20'6"	23'6"	21'0"	26'0"	26'0"	30'0"	33'0"
Dipper Handle	12'6"	15'0"	17'0"	14'0"	17'0"	17'0"	19'0"	21'6"
Standard Dipper Capacity, Cu. Yds.	¾	¾	¾	1	1	1¼	1½	1¾
Coal Digging Dipper	1	1		1¼	..	1	2	1¾
Max. Level Reach	33'0"	34'4"	34'4"	37'0"	38'0"	43'6"	50'6"	50'6"
Max. Height Dump	16'3"	18'3"	22'6"	19'3"	22'0"	23'2"	27'0"	30'8"
Max. Swing Radius	24'8"	27'6"	27'6"	26'0"	28'6"	31'0"	35'0"	37'6"

The above dimensions are for steel shovels

30-B HORIZONTAL CROWD SHOVEL

	Steam	Electric
Dipper, Cu. Yds.	1½	1½
Maximum Dumping Radius	31'6"	31'6"
Maximum Dumping Height	11'0"	11'0"
Maximum Width Level Floor	72'0"	72'0"
Stroke of Bucket	10'7"	10'7"
Main Engine or Motor	6½"x7"	50 H. P.
Swing Engine or Motor	5"x5"	25 H. P.
Thrust Engine or Motor	5"x5"	25 H. P.

Railroad Type Shovels

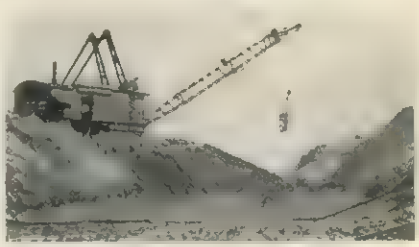
The first Bucyrus railroad-type shovel was built in 1882. Since that time this company has sought to establish and maintain the highest standard in design, material and workmanship. The table below lists the sizes offered. Further information may be obtained by writing for Bulletin A-1. The 68-C and 103-C can be had with electric power. This company is prepared to offer caterpillar mounting for all sizes and makes of railroad-type shovels. This mounting may be applied in the field. This mounting has proved so economical and has so materially increased the mobility and general efficiency of these machines, that it is recommended for the greater majority of installations.

Bucyrus Railroad-Type Shovel on Caterpillars

	Dipper, Cu. Yds.	Height of Dump
68-C	2½	16' 6"
88-C	3½	17' 3"
98-C	4½	18' 0"
103-C	5	18' 6"
110-C	5½	17' 0"

Dragline Excavators

The dragline excavator, because of its great flexibility, its wide operating range and its ability to dig below its own level, is occasionally used for stripping overburden from coal deposits. Its advantage lies in the fact that, being able to operate from the top of the cut, it is never delayed because of a flooded pit and can always keep out of the way of the coal loading shovel. However, where the overburden contains heavy strata of limestone, shale or other rock, a revolving shovel will ordinarily be found more economical. It is sometimes used in opening up very deep cuts in advance of the stripping shovel.



Stripping an Anthracite Coal Deposit With a Class 24

In the table below, space does not permit listing all the boom combinations possible.

	20B		30B		50B		Class 14		Class 20		Class 24		Class 175		Class 320	
Length Boom	35'	40'	40'	45'	45'	50'	60'	80'	85'	95'	100'	115'	125'	137'	143'	155'
Bucket Capacity, Cu. Yds.	¾	⅛	1	⅝	1½	1¼	2	1½	2½	2	3½	2½	4	3	6	5
Max. Digging Reach	37'10"	44'2"	42'8"	47'2"	48'6"	53'0"	84'4"	80'6"	92'2"	89'10"	107'6"	118'0"	129'0"	140'6"	153'0"	164'0"
Max. Dumping Reach	37'-46'	44'-52'	42'-51'	46'-56'	48'-55'	50'-64'	82'-77'	79'-97'	89'-113'	95'-130'	103'-133'	112'-142'	125'-155'	136'-166'	150'-220'	170'-235'

*Depends on Skill of Operator in "Throwing" Bucket

THE MARION STEAM SHOVEL CO.

MARION OHIO

District Sales Offices

NEW YORK—50 Church Street
CHICAGO—1442-1443 Monadnock Block
ATLANTA—807 Candler Building

Sales Representatives at

Philadelphia, Pittsburgh, Denver, Salt Lake City, San Francisco, Seattle, Spokane, Portland Los Angeles New Orleans St Louis, Billings, Mont; Dallas, Texas

Products

Manufacturers of Steam, Gasoline and Electric Shovels in revolving and railroad types ranging in size from $\frac{3}{4}$ to 8 cubic yards dipper capacity. Stripping and Loading Shovels.

Dragline, clamshell and orangepeel excavators with booms ranging in length from 35 to 150 feet.

Dipper, clamshell and hydraulic dredges.

Placer elevator dredges for mining of gold, platinum or tin.

SMALL REVOLVING SHOVELS

Steam, Gasoline or Electric Power. Crawling Traction, Railroad Wheels or Wide Faced Traction Wheels. Crane Attachments.

Model 37 Electric Shovel

Models 21, 32 and 37 cover the entire field of application for shovels in the small revolving class. They are of powerful and rugged construction, built to withstand continuous heavy duty.

Each Model can be furnished with steam, gasoline or electric power and with any one of three types of mounting—crawling traction, railroad wheels or wide faced traction wheels.

High Lift Equipment can be supplied where extra reach or height dump is required. Shovel and crane attachments are interchangeable on the same machine, thus adapting each model to a large variety of work.

Model 32 Steam Shovel

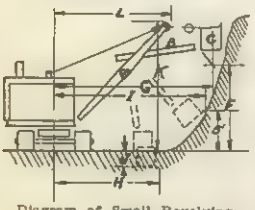


Diagram of Small Revolving Shovel

WORKING RANGES

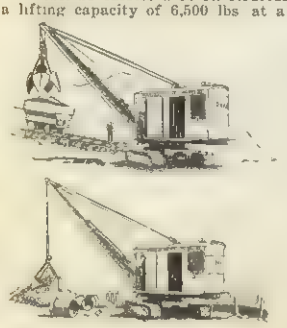
Standard and High Lift Revolving Shovels—Mounted on Crawling Traction Trucks

Boom at Angle of 47½°	Model 21		Model 32			Model 37		
A—Length of Boom	17'6"	20'0"	22'0"	21'0"	24'0"	27'0"	25'0"	28'6"	32'0"
B—Length of Dipper Handle	13'6"	15'0"	16'0"	15'0"	17'6"	17'6"	17'0"	19'0"	22'0"
C—Size of Dipper cu. yds.	¾	¾	¾	1¼	1¼	1	1⅝	1⅝	1¼
D—Capacity per Hr. cu. yds.	30-80	30-80	20-40	50-100	50-100	40-80	70-140	70-140	50-100
E—Approx Working Wght. lbs.	73[illegible]	[illegible]000	[illegible]000	80000	84500	85500	120000	[illegible]000	[illegible]000
F—Height of Dump	13'1"	14'10"	16'5"	16'5"	19'7"	21'3"	18'[illegible]	21'7"	24'1"
G—Radius of Dump	23'5"	25'4"	25'9"	25'9"	28'7"	29'5"	29'9"	32'7"	36'1"
H—Radius of Cut at Grade	16'8"	17'5"	18'4"	18'2"	19'8"	20'0"	21'6"	23'0"	24'8"
I Radius of Cut at 8 ft. Elevat'n	25'0"	27'11"	28'4"	28'6"	31'8"	31'10"	32'3"	35'0"	38'2"
J—Depth of Cut	3'9"	5'8"	5'0"	4'11"	6'4"	4'10"	5'3"	7'11"	7'0"
K—Height of Boom	18'0"	19'10"	21'4"	21'10"	24'0"	1'3"	25'5"	26'3"	33'7"
L—Radius of Boom	16'4"	18'0"	19'6"	19'5"	21'6"	23'6"	22'11"	27'0"	27'7"

THE VERSATILITY OF MARION REVOLVING SHOVELS

With Crane Attachments and With Crawling Traction Mounting

Model 21 carries a 35 ft. structural steel boom and has a lifting capacity of 6,500 lbs at a radius of 35 feet. It can be equipped with a ¾ cubic yard dragline or clamshell bucket, or a 15 cu. ft orangepeel bucket.

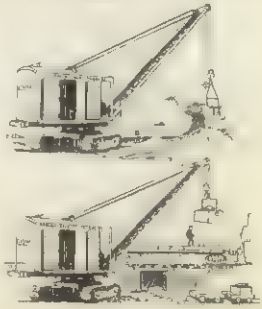


Crane Attachments

Model 32 crane boom is 40 feet long. With the point of the boom swinging on a radius of 40 feet, this model has a lifting capacity of 10,000 pounds. Dragline or clamshell bucket has a capacity of 1 cubic yard—orangepeel bucket 21 cubic feet.

Model 37 carries a 50 ft. boom when equipped as a crane, or as a dragline, clamshell or orangepeel excavator. It will lift 11,500 pounds at a radius of 50 feet. When used as a dragline or clamshell excavator, the bucket has a capacity of 1⅛ cubic yards. Orangepeel bucket is heavier and has a capacity of 1¼ cubic yards.

A power driven boom hoist is furnished as part of the regular crane equipment. The boom can be raised or lowered as desired, thus increasing or decreasing the lifting capacity, depending on the angle at which the boom is suspended.



Crane Attachments

LARGE REVOLVING SHOVELS

The mining of surface coal in large quantities, like many of our other present day industries, has been placed upon a "machinery operated" basis. Obsolete methods of stripping and hand mining are too slow and too expensive. Marion large revolving shovels—the pioneer successful coal stripping machines—are capable of opening up properties where the overburden is as deep as 60 feet. They can successfully handle all kinds of materials encountered in the operation of open pit mines and have capacities sufficient for maximum output.

These shovels can be furnished with steam or electric power and in various sizes and combinations as specified in the following table.

WORKING RANGES
Large Revolving Shovels
Single Boiler Truck Mounting

Boom at Angle of 45°	Model 212		252	Model 350	
A—Length of Boom	45'0"	55'0"	75'0"	80'0"	90'0"
B—Length of Dipper Handle	28'0"	34'0"	46'0"	52'0"	56'0"
C—Size of Dipper, cu. yds.	2	1½	3½	5	6
D—Capacity per Hour, cu. yds.	75–150	75–150	100–200	150–300	150–300
E—Approximate Working Weight, lbs.	155000	155000	[illegible]	91000	[illegible]
F—Height Dump Above Rail	33'0"	40'0"	[illegible]	53'0"	55'0"
G—Radius of Dump	57'0"	69'0"	83'0"	94'0"	100'0"
H—Radius of Cut at Grade	36'0"	41'0"	57'0"	64'0"	68'0"

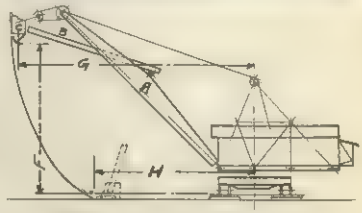


Diagram of Large Revolving Shovels

STRIPPING AND LOADING SHOVELS

After the overburden has been removed (the large stripping shovel working on top of the coal strata) the coal can be loaded direct into mine or railroad cars with a smaller Marion. On the loading shovel the dipper has long pick point teeth, and when desired the shovel can be equipped with long boom and handle for extra reach and dump. On smaller operations this same shovel can be used for stripping.

The accompanying illustration shows Model 350 stripping shovel and Model 37 loading shovel. Specifications and working ranges for Model 37 are listed on opposite page.

LARGE REVOLVING DRAGLINES

Occasionally in open-pit mining it is advisable to handle the stripping from the top. When this is the case dragline attachments can be used more efficiently and economically than the regular shovel fittings. All Marion large revolving Models are readily convertible into dragline machines and when so equipped can be furnished with steam or electric power.

RAILROAD TYPE SHOVELS

Used principally in building grades for railroads and in handling heavy excavations where materials are loaded into cars for movement away from the work. These can be furnished with steam or electric power and with crawling traction, railroad or traction wheel mounting.

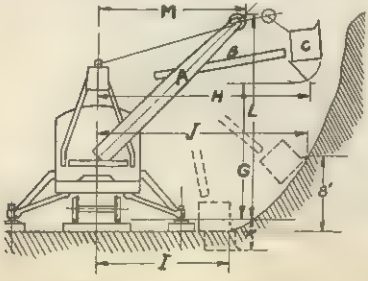


Diagram of Railroad Type Shovel

WORKING RANGES
Railroad Type Shovels — Mounted on Railroad Trucks or Crawlers

	Model 41	Model 51	Model 61	Model 70	Model 78	Model 92	Model 102
A—Length of Boom	20'0"	23'0"	25'0"	27'0"	28'0"	30'0"	32'0"
B—Length of Dipper Handle	12'6"	15'0"	16'0"	17'0"	18'6"	19'6"	19'6"
C—Size of Dipper cu. yds.	¾–1½	1½–2¼	2–3	2–3½	2¼–4	3–5	3–6
D—Capacity per Hour, cu. yds.	60–180	80–270	120–350	125–375	150–400	200–500	250–550
E—Approx. Working Weight, lbs.	93000	134000	161000	184000	213000	244000	271000
F—Boom Swings Back of Right Angle	40°	10°	10°	5°	5°	5°	5°
G—Height of Dump	13'0"	14'6"	16'0"	16'6"	17'0"	17'0"	17'0"
H—Radius of Dump	20'4"	24'3"	26'10"	27'4"	29'0"	31'2"	31'1"
I—Radius of Cut at Grade	14'8"	15'2½"	17'x"	17'9"	18'10½"	19'9"	19'10"
J—Radius of Cut at 8 ft. Elevation	22'0"	26'0"	27'11"	28'9"	30'9"	32'6"	32'0"
K—Depth of Cut Below Wheels	4'4"	8'11"	5'0"	5'2"	6'3"	5'9"	6'1"
L—Height of Boom	19'7½"	23'1¼"	24'8"	26'9¼"	27'9¼"	29'6"	31'7"
M—Radius of Boom	15'10"	18'0"	19'9"	21'2"	21'10"	23'4"	24'9"

WESTERN WHEELED SCRAPER CO.

AURORA, ILLINOIS, U. S. A.

Branch Sales Offices

Atlanta, Ga. .....602 Rhodes Bldg
Chicago Ill. .....29 S. LaSalle St
Dallas, Texas.....410 S. Lamar St
Kansas City, Mo .....1737 Walnut St
Memphis, Tenn.....91 S. Front St.

Branch Sales Offices

New York City N. Y.....50 Church St.
Omaha, Neb .....1108 Nicholas St.
Pittsburgh Pa. .....Keystone Bldg
St. Louis, Mo .....2918 S. Broadway

Dump Cars in Strip-Mining and Coal Storage

Features of Western Dump Car Superiority

The very wide-spread use of Western Dump Cars, of 4-yard, 5-yard or 8-yard capacity, in the coal fields, for both stripping and handling coal, is based on sound business reasons. They are substantially built, easily operated, inexpensively maintained, not easily derailed. They contain few castings to be replaced and those few are easily accessible. All this means lower production costs.

New 15-Ton Pit Car

Co-operating with practical men of a large bituminous strip-mine, The Western Wheeled Scraper Company has produced a new and very successful pit car, pronounced by experts, "The best thing ever gotten out for handling coal."

It is a one-way, double truck, automatic, air dump car, 36-inch gauge, rated to carry 15 tons of coal. In operation it actually carries 18 tons. The cost per ton of capacity is very low. The car rides steady, eliminating spillage. Its dumping angle is less than ordinarily is the case, which lessens the breakage of coal. It is easier on the track than the single-truck cars. A train of these cars carrying 140 tons requires less than two minutes for dumping at the head-house.

Additional information will be sent upon request.

Western Cars For Coal Storage

For coal storage purposes, as well as for the economical handling of other bulky material, a Western air dump car is built of 45 cubic yards capacity, being a standard 30-yard Western automatic air dump car with built-up sides and ends which are easily removable.

Western 5-yard cars, 36" gauge, dumped positions. The 4-yard size is a little lighter and has a correspondingly less tonnage.

Western 45-yard automatic air dump car, 4½" gauge, normal position—a car of great strength and capacity, used in hauling coal for storage purposes.

Western Mechanical Design

Western Dump Cars discharge on either side. The beds are hinged longitudinally over the draft beams. Have steep dumping angle and wide discharge opening. The doors open automatically as the bed is tipped and drop back when returned to loading position. They are built of high class material by skilled workmen, and are strong, durable and economical in operation. The beds are constructed either of wood, combination wood and steel, or steel, as ordered.

SPECIFICATIONS IN BRIEF

Capacity	Gauge	Wheels		Overall Dimensions			Approx. Weight Lbs.
		No.	Dia.	Length	Width	Height	
4 cu. yds.	36"	4	18"	12' 2"	7' 1"	5' 7¼"	6 600
5 cu. yds.	36"	4	24"	12' 2"	7' 6"	6' 2"	8 900
15 tons	36"	8	24"	18' 11"	9' 2¾"	6' 11⅝"	23 200
45 cu. yds.	56½"	8	33"	38' 3"	11' 4"	10' 2"	64 200

Catalog Sent on Request.

Catalog illustrating and describing the various types and sizes of Western dump cars, from one cubic yard to 45 cubic yards capacity, will be sent on request. The Engineering Department of the Western Wheeled Scraper Company can be consulted at any time, entirely without obligation, as to the most economical installation and track layout.

Western 15-ton coal car, 36-inch gauge, made originally for the Peavey Coal Company. This is in daily traffic on a way, air dump cars with double trucks capable of unloading 140 tons of coal in 1¾ minutes.

MOSSBERG WRENCHES

SOCKET WRENCH SETS

Mossberg No. 14.

Largest, most complete socket wrench set ever marketed.

To give you a full socket wrench set with every tool unit of usefulness, is the reason for the No. 14 Socket Wrench Set. In the line of constant endeavor to improve the set, a double-end Offset Screw Driver takes the place of the old style screw driver bits, and the tools, formerly packed in the cover, have been placed in a tray.

You will appreciate the new "No. 14."

No.	Sizes of Hex. Sockets Inches	FITTING U. S. Std. Hex Nuts & Bolts Bolt Size Inches	S. A. E. Std. Nuts & Screws Screw Size Inches	Hex. Hd. Cap Screws Screw Size Inches	Hex. Coach Screws Screw Size Inches
110	7/32	..	..	..	..
112	9/32	..	..	..	..
113	11/32	..	..	..	1/4
114	13/32	..	..	5/16	..
115	15/32	..	1/4	3/8	..
116	7/16	..	..	..	5/16
117	17/32	1/4	5/16	7/16	..
119	19/32	..	3/8	9/16	3/8
120	5/8	5/16	..	..	..
121	21/32	3/8	7/16	5/8	..
122	11/16	..	..	..	7/16
123	23/32	7/16	..	..	..
125	25/32	..	1/2	11/16	1/2
126	13/16	1/2	..	..	..
127	27/32	..	..	3/4	..
128	7/8	..	..	..	..
129	29/32	9/16	5/8	13/16	..
131	31/32	..	7/16	..	5/8
132	1	5/8	..	..	..
133	1 1/32	..	11/16	7/8	..
135	1 1/16	3/4	3/4	..	..
137	1 1/8	..	..	15/16	3/4
141	1 1/16	7/8	7/8	1	..

In wooden box containing:

1 Mossberg Ratchet Socket Handle No. 350.
1 Mossberg No. 330 "T" Handle.
1 Mossberg No. 320 Offset Socket Wrench Handle.
1 Extension Bar No. 351, 10 inches long.
1 Pair 6-inch Combination Pliers.
1 S. A. E. Double-End Wrench Set, Full Finish, five wrenches, ten openings.
1 Universal Joint.
3 Special Spark Plug Sockets, sizes 29-32 inch, 31-32 inch, and 1 1/32 inches.
1 Double-End Offset Screw Driver No. 101.
1 Cotter Pin Extractor No. 3, mottled finish.
23 sizes Hex. Sockets, Mottled Finish, and properly hardened.
11 sizes Square Sockets, Mottled Finish, and properly hardened

No.	Sizes of Square Sockets Inches	FITTING Square Hd. Cap Screws Screw Size Inches	Square Hd. Set Screws Screw Size Inches	Square Hd. Coach Screws Screw Size Inches	Std. U. S. Square Nuts Bolt Size Inches
163	13/32	1/4	5/16	1/4	..
165	15/32	5/16	3/8	..	..
167	17/32	3/8	7/16	5/16	1/4
169	19/32	7/16	1/2	3/8	..
171	21/32	1/2	9/16	..	5/16
173	23/32	9/16	..	..	3/8
175	25/32	5/8	3/4	1/2	..
179	29/32	3/4	7/8	..	1/2
183	1 1/32	..	1	..	5/8
187	1 5/32	7/8	..	3/4	..
191	1 3/32	1	..	..	3/4

Mossberg Socket Wrench Set No. 14—Weight, each, about 17½ pounds. Each.....$16.00

Mossberg.

For Automobile and Motor Boat Work.

For All Classes of Hexagon Wrench Users.

Socket wrench users are beginning to appreciate the speed and increased efficiency of ratchet handles and interchangeable sockets.

No. 13 set is arranged to contain all important hexagon sockets, including spark plug sockets, extension bar and the low-priced, efficient No. 355 ratchet handle.

In wood cases containing:

Mossberg ratchet socket wrench handle No. 355.

Extension tube No. 351, 9½ inches long.

Fifteen mottled, thoroughly hardened, pressed steel guaranteed sockets, fitting standard sizes of screws, nuts and bolts as follows:

Sizes of Hex. Sockets Inches	FITTING U. S. Std. Hex. Nuts and Bolts Bolt Size Inches	Hex. Head Cap Screws Screw Size Inches	Hex. Head Coach Screws Screw Size Inches
11/32	..	..	1/4
13/32	..	1/4	..
15/32	1/4	5/16	5/16
17/32	5/16	3/8	3/8
9/16	3/8	..	..
5/8	7/16	7/16	..
11/16	1/2	..	1/2
3/4	9/16	1/2	..
13/16	5/8	..	5/8

Continued on following page.

SOCKET WRENCH SETS

Mossberg.

Continued from preceding page.

Sizes of Hex. Sockets Inches	FITTING		
	U. S. Std. Hex. Nuts and Bolts	Hex. Head Cap Screws	Hex. Head Coach Screws
	Bolt Size Inches	Screw Size Inches	Screw Size Inches
7/16	1/4	1/4	1/4
1/2	5/16	5/16	5/16
9/16	3/8	3/8	3/8
5/8	7/16	7/16	7/16
11/16	1/2		

One 13/16-inch hexagon spark plug socket, 4 inches long.

Mossberg socket wrench set No. 13—In wooden box. Weight, each, about 5 pounds. Per set.....$5 75

List of Extras for Socket Chest No. 300.

Pressed steel sockets—Assorted sizes. Each.....$0 25
Pressed steel spark plug sockets—Assorted. Each. .33
No. 350—Reverse ratchet socket handles. Each.. 2.25
No. 355—Ratchet handle. Each..... 1.25
No. 322—Double-end offset and vertical handle. Each..... .35
No. 340—Take-down T handle. Each..... .75
No. 336 Universal joint. Each..... .55
No. 351—Extension tube. Each..... .60

Universal Auto Sets.

No. 10 socket wrench set—Consists of 21 sockets, one ratchet handle, one extension bar, one universal joint, one screw driver, all sockets mottled and case hardened.

Size sockets as follows:

For hex. head cap screws 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8 and 1 inch.

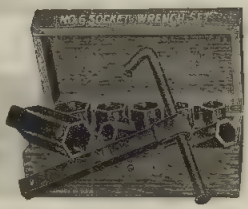
For manufacturers' standard hex. head bolts (bolt size) 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 and 3/4 inch.

For A. L. A. M. standard 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4 and 7/8 inch.

For U. S. standard hex. 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 and 3/4.

For hex. spark plug sockets (4 inches long) 13/16 and 1 1/16 inch openings.

All complete in a wooden box. Weight, per set, about 7¾ pounds. Per set.....$8.25



Containing 7 sockets for hexagon nuts, 11/16, 13/16, 7/8, 15/16, 1, 1 1/16 and 1 1/16 inch, fitting set screws, bolts and nuts in general use. Also one special spark plug socket and folding handle.

No. 6—Made of the best material and packed in a wooden box. Weight, per set, about 3 lbs. Per set....$3.25

Large Auto Cle set, contains 31 sizes of pressed steel sockets, special spark plug socket, 1 large take-down reversible ratchet handle, 1 swivel or universal joint which permits using wrench at any angle, 1 9½-inch extension bar, 1 1¾-inch extension bar, 1 screw driver. The sockets will fit all bolts, nuts, etc., used on American and foreign cars.

No. 1—Complete as above, in a hardwood box. Weight, each, about 10 pounds. Per set.....$12.00

Extra Sockets for Auto Cle Wrench Sets.

Will also fit Walden.

Size Opening									
	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16
	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16	1
	9/16	5/8	11/16	3/4	1	1 1/16	1 1/8	1 3/16	1 1/4

Any size or assorted. Single lots. Each.....$0.25
Any size or assorted. Dozen lots. Each..... .18

MOSSBERG WRENCHES FOR USE ON FORD CARS

SOCKET WRENCH SETS

No. 30 set, packed in wooden case, contains:

One No. 355 ratchet socket wrench.

One No. 351 extension tube, 9¼ inches long.

One No. 336 universal joint. (You can really turn round a corner with this.)

One No. 101 screwdriver.

Ten pressed steel sockets. (Heaviest of their kind.)

One spark plug socket, ⅝-inch, to fit Champion X plug now in common use.

FITTING

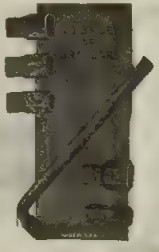
Sizes of Hex. Sockets Inches	U. S. Std. Bolt Size Inches	S. A. E. Screw Sizes Inches	Hex Head Cap Screw Size Inches	Decimal Equivalents Inches
7/16	⅛	7/16	7/16	.531
1/2	...	1/2	1/2	.594
9/16	...	9/16	9/16	.656
5/8	5/8	...	...	.719
11/16	...	5/8	5/8	.781
3/4	1/2	11/16	11/16	.906
7/8	...	3/4	...	.969
1	...	...	...	....

FITTING

Size of Square Sockets Inches	U. S. Std Bolt Size Inches	Square Head Set Screws Inches	Square Head Cap Screws Inches	Decimal Equivalents Inches
1/2	...	7/16	7/16	.469

To fit main bearing nuts and bolts of 1915 cars.

Mossberg No. 30 set—Packed in wooden box. Weight, each, 4 pounds. Each.....$5.75



Five sizes of sockets that fit the nuts that need most adjustments and handle especially designed for this work.

Notice that two sizes of sockets are especially tapered to fit nuts, otherwise impossible to adjust; ⅜-inch hexagon socket is tapered for rear axle housing nut, and ⅜-inch hexagon socket is ground to properly fit engine base bolts.

This set is equipped with double-end vertical or offset handle No. 321.

Guaranteed sockets as follows:

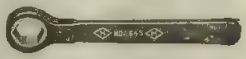
Hexagon: ⅜-inch tapered, ⅜-inch tapered, ⅜-inch (cylinder head nuts), ⅝-inch and ⅝-inch hex.

Mossberg socket wrench No. 33—In enamel duck case. Weight, each, about 1¼ lbs. Each....$1.35

SINGLE WRENCHES

Reversible and Brake Pedal Tension Spring Wrenches for Ford Automobiles.

Ratchet Tension Spring Wrench.



The ambition of Mossberg Company is to supply the cleverest and most efficient tool for the top—afterwards, to offer it to its customers at as low a price as will allow a livable profit.

No. 645 ratchet wrench—For reverse and brake pedal tension springs is the net result in this line $0.50

Each wrench packed in separate box.

Cylinder Head and Rear Axle Housing Nut Wrench No. 630 for Fords.

The large socket on the double-end gives high powered leverage to start or tighten cylinder head nuts. The single-end socket twirls these nuts rapidly after they are loosened. The small socket on the double-end is tapered to fit nuts on rear axle housing; no other wrench will carry these nuts.

Mossberg has standardized this wrench.

No. 630—Weight, each, about ¾ pound. Each...$0.73

Spring Perch Nut Wrench.

Fits all perch spring nuts and particularly invaluable in shock absorber adjustment.

Openings: 15-16 and 1 inch hex.

15-16 inch hex. Fits, Front spring perch nut. Rear hub lock nut.

1-inch hex. Fits, Rear spring perch nut.

Construction: 9-16 inch steel bar. Sockets of special analysis steel.

No. 634—Burnished nickel; length, 10¼ inches. Weight, per carton, 9 pounds. Each.....$1.25

Packed six in a carton.

Universal Joint Assembly Wrench.

Actually saves one man's time on this difficult job. No more "fishing" but a quick, clean assembly.

Opening: 15-16 inch slot.

Fits: Universal joint knuckle (male).

Construction: 5-32 inch heavy steel.

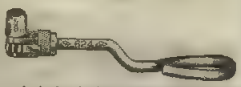
No. 652—Burnished nickel; length, 8 inches. Weight, per carton, 4 pounds. Each.....$0.75

Packed six in a carton.

WRENCHES
FOR USE ON FORD CARS

Mossberg

Wrench for No. 4 Connecting Rod on Fords.



After removing the pan underneath the engine of a Ford, the three front connecting rods are fairly easy to adjust, but the fourth is back from the opening and (working from under the car as one must) a special wrench is absolutely necessary to adjust this No. 4 connecting rod.

This tool is designed to just meet the conditions and its use will many times **obviate the necessity of taking down the engine.**

Some difference between the cost of this wrench and the cost of taking down the engine.

Mottled finish and thoroughly hardened.

No. 623 Mossberg connecting rod wrench—Packed in strong fibre envelope. Each.....$0.58

Weight, each, about ¾ pound.

No. 624—Mossberg connecting rod wrench with ratchet—Packed in strong fibered envelope. Each.....$2.50

Weight, each, about 1¼ pounds.

Double-End Spark Plug and Cylinder Head Screw Wrench for Fords

Seems as though these two jobs of adjusting spark plugs and cylinder head screws go together. They sure do when you remove the cylinder head block.

So one wrench with two openings, each for its own work, is very natural and in big demand.

The flat opening of ⅞ inches fits the conventional Champion "X" plug so commonly used on Ford cars, and is offset to get down on to the spark plug body nut.

The socket is one of the new Mossberg "Heavy Duty" type and is guaranteed to its full capacity. This socket measures 15/64 inches, to accurately fit cylinder head cap screws, and all ⅜ inch bolts.

No. 635—Length, 10 inches; finished nickel plated and is absolutely guaranteed; weight each, 1 lb. Each.$0.85

One in a box.

Fourth Connecting Rod Wrench.

One of the best wrenches for adjusting connecting rod clamp screws and particularly quick acting on No. 4 connecting rod. Opening, ⅝-inch hex.

Fits: Cylinder inlet connecting screws.

Crank shaft bearing bolt (rear).

Cylinder head cap screws (assembly).

Construction: ½-inch heavy steel bar. Sockets of special analysis steel.

No. 628—Burnished nickel; length 14½ inches. Weight, per carton, 10 pounds. Each.....$1.75

Packed six in a carton.

Carburetor Bolts and Generator Screws Double-end Wrench.

Specially adapted for carburetor bolts and generator screws and fits 20 other adjustments on Ford cars.

Openings: ⅝ and 9-16 inch hex.

Fits: ⅝-inch hex. Especially adaptable:
- Cylinder front cover cap screws.
- Cylinder head cap screws.
- Cylinder head outlet connecting screw.
- Drive shaft roller bearing screws.

With interfering parts removed: Body bracket connecting bolt and nut.

9-16 inch hex. Especially adaptable:
- Ball socket bolt and nut.
- Carburetor flange bolt and nut.
- Connecting rod cap bolt and nut.
- Crank case cap screws.
- Muffler head-to-frame bolt and nut.
- Radius rod ball cap stud nut.
- Rear spring tie bolt and nut.
- Steering post bracket bolt and nut.
- Steering yoke clamp bolt.

With interfering parts removed:
- Brake and reverse support bolt and nut.
- Cylinder valve cover screws.
- Fan adjusting screw.
- Magnet bolts.
- Radiator stud nut.
- Transmission cover bolts and nuts.
- Universal ball cap bolts and nuts.

Construction: ½-inch steel bar.

No. 627—Burnished nickel; length, 10 inches. Weight, per carton, 4½ pounds. Each.....$1.00

Packed six in a carton.

HANDY WRENCHES

This is a new wrench set which fills a long felt want. The "Sexto-Rench" set is made of steel 3/32" thick. The wrenches are highly polished and nickel plated all over and present a beautiful appearance. The following are the twelve sizes which this wrench set will take care of:

1/4", 1/16", 5/16", 3/8", 7/16", 1/2", 9/16", 5/8", 11/16", 3/4", 13/16", 7/8".

This set is specially useful in connection with magnetos, coils, valve tappets and many bolts and nuts around an automobile. Every mechanic wants one of these wrench sets for his tool box.

No. 6—Sexto-Rench. Length over all, 5 1/8 inches; six wrenches; twelve sizes. Weight, each 3/4 pound. Each $0.75

One in a box.

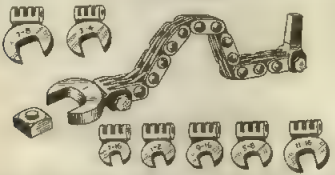
WRENCH ASSORTMENTS

Hamilton.

The **Hamilton** Wrench Set is made of steel, 1 1/2 inches thick. They are nicely finished and fastened together with a bolt so they may be kept together. This assortment consists of six wrenches, ranging from 3 to 5 inches long and will fit nuts as follows: 1/4-inch, 5/16-inch, 3/8-inch, 7/16-inch, 1/2-inch, 9/16-inch, 11/16-inch, 13/16-inch, 1/2-inch and 7/8-inch.

No. 507—Weight, per assortment, 2 1/2 pound. Per dozen assortments $3.60

Snake Handle Wrench.



The flexible handle of this wrench admits of its use in the most inaccessible places. It is an all steel tool with jaws and shank of drop frogings. The eight jaws and socket shank fit either end of handle and can be changed instantly. Socket shank is square taper and will fit any socket. Complete with eight jaws of the following sizes: 7-16, 1/2, 9-16, 5/8, 11-16, 3/4, 7/8 and 1.

Snake Handle Wrench—Weight, each 3 lbs. Each .. $6.00

Packed one in a wooden box.

TAPPET WRENCH SETS

E. E.

This is a new set of thin wrenches made of the best grade of steel, properly case hardened and nicely finished, comprising the following sizes: 7/16 inch by 11/16 inch, 1/2 inch by 9/16 inch, 5/8 inch by 7/16 inch.

There are six double end wrenches, two of each size for adjusting valve tappets. This set will take care of almost every car made.

E. E. Tappet Wrench Set—Complete in handsome leatherette case. Each $1.00

Cinematograph, Stereoscopes and Views

No 46C41. Cinematograph, three inches long, made of heavy stock sheet tin, black enameled, with powerful magnifying glass. Complete with 30 slides in many different colors. Each set in box.
Per gross sets. ... 10.00 | Per dozen sets..... .85

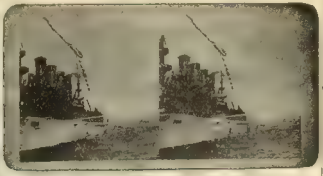
No. 46C1. Stereoscope. Well made scope has a black pressed paper hood, 1-inch high-grade crystal lenses, wood lense holder, screw handle, adjustable slide, natural wood color. One-sixth dozen in box.
Per dozen..... 3.75

No. 46C37A. Stereoscope. Black pressed paper hood, edge bound with velveteen, 1 inch high-grade crystal lenses, screw handle, adjustable slide, natural wood finish. One-sixth dozen in carton.
Per dozen..... 4.50

ENGRAVED ALUMINUM HOOD SCOPE

No. 46C3. Stereoscope. Engraved aluminum hood, trimmed with velveteen, 1¼-inch high grade crystal lenses, wood lens holder, hinge handle, adjustable slide, walnut finish. One-sixth dozen in box.
Per dozen, .. 7.50

No. 46C4. Franco-British Views. 25 views of the French and British armies in the present European war. Very interesting.
Per 1000..... 6.25 | Per set . . .20



No. 46C7. Fighting Ships and Life of Uncle Sam's Sailor Boys. 25 views of the great battleships and the life of the sailors at work and at play.
Per 1000..... 6.25 | Per set. .20

No. 46C5. Italian and Austrian War Views. 25 views of European war richly tinted in proper colors. An excellent set of very interesting and attractive views
Per 1000 . . 6.25 | Per set ..... .20

No. 46C8. Our Soldier Boys in France. 25 handsome stereoscopic views in colors, showing all of the most interesting features of the American soldier boys in France. Entirely new and very appropriate
Per 1000..... 6.25 , Per set. .20

Stereoscopic Views

No. 46C33. Stereoscopic Views. 25 views of various countries and incidents that occurred on a trip around the world with Uncle Sam's battleships. A very interesting set of pictures

Per thousand..... 6.25 | Per set..... .20

No. 46C34. Stereoscopic Views. 25 views of the duties soldiers are required to perform while defending their home and country. These views give very clear insights of the life in camp as well as on the fields.

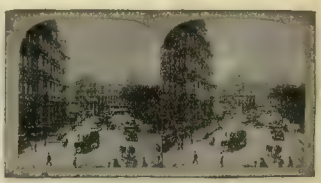
Per thousand..... 6.25 | Per set..... .20

No. 46C39. Stereoscopic Views. 25 views of Uncle Sam's Soldier boys, showing some of the most interesting features of the American soldier boys as they appeared in France. A very interesting as well as instructive set of views.

Per thousand..... 6.25 | Per set..... .20

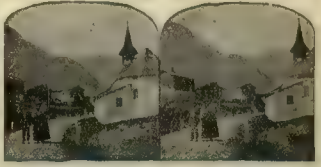
No. 46C36. Stereoscopic Views. 25 views of girls up to all sorts of mischief and having lots of fun. A set of comical and very amusing views.

Per thousand..... 6.25 | Per set..... .20



No. 46C38. Stereoscopic Views. 25 views of "An Auto Trip Around New York." Included are many famous buildings, parks, drives, etc., and places of interest for which this great city is particularly noted.

Per thousand..... 6.25 | Per set..... .20



No. 46C40. Stereoscopic Views. 25 views of the big cities of Europe. A most interesting selection of historical and celebrated cities, some of which are identified with the history of the world today. These pictures were made by one of the world's most celebrated travelers.

Per thousand..... 6.75 | Per set..... .22

Stereoscopic Views

Are You Our New Cook?

No. 46C9—FRENCH COOK AND COMIC LOVER SERIES.

Twenty-five Views, a comic set by Griffith & Griffith. This set of French Cook series consists of eight scenes, the most attractive ever made, together with fifteen other comic lovers. The verdict of everybody who have seen this set decides it to be a great one.

Per 1000 ..... 6.25 | Per set ..... .20

The Wedding March.

No. 46C12—WEDDING BELLS.

This set of twenty-five Views, known as Wedding Bells, is very interesting and attractive—they are reproductions from an actual wedding, showing the courtship; also the course of true love never runs smooth, and the wedding ceremony.

Per 1000 ..... 6.25 | Per set ..... .20

A Happy Trio.

No. 46C10—PETS AND ANIMALS.

Twenty-five Views of the most attractive and odd pictures—comical situations of children and pets, thus we have here twenty-five Views of the most pleasing and interesting pictures of the battles of children and their pets. These Views are so natural you would really think they were expressly posed for—but they were taken when the children and their pets were unconscious of the fact.

Per 1000 ..... 6.25 | Per set ..... .20

Conservatory, Pittsburg, Pa.

No. 46C13—ODD SIGHTS AND SCENES OF THE WORLD.

Twenty-five Views, a companion set to the Wonders of the Old World, which combined make almost a complete Tour of the World, which are unique and interesting.

Per 1000 ..... 6.25 | Per set 20

A Young Dandy.

No. 46C11—BOYS WILL BE BOYS.

This is a strong juvenile set of precocious kids that are up to all sorts of mischief and have lots of fun. It is a very clever and attractive set and fits in well with a series of comic Stereoscopic Views.

Per 1000 ..... 6.25 | Per set ..... .20

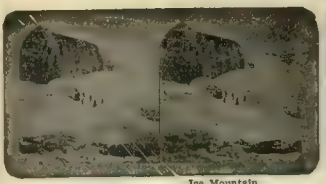
Faneuil Hall, Boston.

No. 46C14—HISTORICAL SPOTS OF AMERICA.

Twenty-five Views of the most famous historical places in America, including the famous historical spots of the American Revolution, Faneuil Hall, Boston, the Cradle of Liberty, and other interesting historical places.

Per 1000 ..... 6.25 | Per set ..... .20

Stereoscopic Views



Ice Mountain, Niagara Falls.

No. 46C27—NIAGARA FALLS AND WATKINS GLEN.

Twenty-five Views of Niagara Falls in Winter and Summer, together with a visit to Watkins Glen. This set of Views show Niagara River in all its glory of Summer-time and its wonderful Winter clothes. They show the magnificent, prodigious ice domes, also the different formations only to be seen at this great wonder spot of the world. The Views of Watkins Glen are unique and very interesting.
Per 1000 ..... 6.25 Per set ..... .20

Virginia Road, Yellowstone Park.

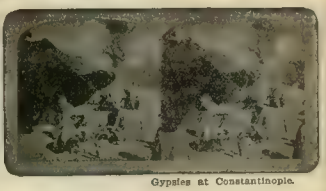
No. 46C28—THE GREAT NORTHWEST AND A VISIT TO YELLOWSTONE PARK.

Twenty-five Views of Yellowstone National Park, including Views of the Garden of the Gods, Pike's Peak, etc. This series of Views is perhaps the only series of its kind ever made, and reveals all the grandeur and beauty of Yellowstone National Park, such as has never been seen before, unless visited in reality. The Grand Canyon, Geysers, etc., are seen standing out in bold relief and it gives a person some idea of the great wonders of this wonderful Park.
Per 1000 ..... 6.25 Per set ..... .20

Campo Santo, Genoa, Italy.

No. 46C29—WONDERS OF THE OLD WORLD.

enty-five Views taking in all the sights of the Old World, together with the odd things done in the Old World—a set of Views never before published. This set goes as a companion set to Odd Sights and Scenes of the World.
Per 1000 ..... 6.25 | Per set..... .20



Gypsies at Constantinople.

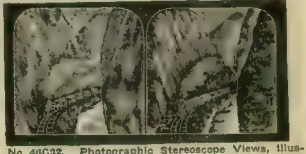
No. 46C30—TOUR OF PALESTINE AND THE HOLY LAND.

Twenty-five Views of the Holy Land and scenes from the Bible, showing as we do a trip down the Nile and places made famous in Bible History. The Views show the manner and customs of the people, together with the historic spots marked by the life of Christ.
Per 1000 ..... 6.25 Per set ..... .20

Wedding at Cana.

No. 46C31—LIFE OF CHRIST.

Twenty-five Views of the Life of Christ, and reproductions of the great paintings of Christ's last moments on Calvary. This unique set is a revelation of what can be done with Stereoscopic Views, and by looking through the Scope we can almost see Christ breathing. In these Views His life is shown from the manger to the cross, including a magnificent View of the crucifixion; also several tableaus and scenes of His last moments.
Per 1000 ..... 6.75 | Per set ..... .22



No. 46C32. Photographic Stereoscope Views, illustrating a trip across the Panama Canal, 25 views including greatest engineering feats of the 20th Century, showing the wonderful progress made on the greatest canal in the world.
Per 1000 views..... 6.25 | Per set ..... .20

Do not assume, because we fail to list a particular new item you have seen that we have not got it. Ask us for it.

Stereoscopic Views

Washington's Tomb, Mt. Vernon

No. 46C21—A VISIT TO WASHINGTON

Twenty-five views of the great sights in Washington and a visit to Mount Vernon and Arlington Cemetery. This set includes views of the exterior of the Capitol and White House, interiors of the East Room, Blue Room and Red Room in the White House, and Congressional Library, together with views of Mount Vernon, showing the tomb of Washington, and a visit to Arlington Cemetery.

Per 1000..... 6.25 | Per set..... .20

No. 46C22—A TOUR OF CANADA.

Twenty-five views of the principal cities and points of interest from Halifax to British Columbia, including some delightful views of the Canadian Rockies

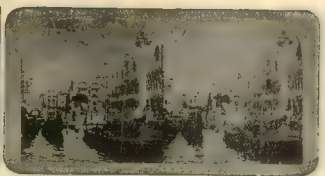
Per 1000..... 6.25 | Per set..... .20

Infantry Drill, Philippine Islands

No. 46C23—A TRIP TO THE PHILIPPINES WITH UNCLE SAM'S SOLDIER BOYS.

Twenty-five views of the life of the soldier boys in the Philippines. This set is considered the most unique set of its kind ever made, showing as it does the life of our soldier boys in the far-away Philippines, and strong and interesting views of the Filipinos and their method of living, together with several views of the islands. It is a splendid series, both from an educational and entertaining standpoint.

Per 1000..... 6.25 | Per set..... .20



Doge's Palace, Venice

No. 46C24—A VISIT TO ROME AND VENICE.

Twenty-five views of Rome and Venice which are simply magnificent and gorgeous, representing as they do fourteen views of the Eternal City, including views of the Vatican and the Vatican Gardens, St. Peter's Church in Rome, the Colosseum and other historical spots. Eleven beautiful views of Venice, including the Rialto, St. Michael's and other world-renowned places

Per 1000..... 6.25 | Per set..... .20

Munster Cathedral, Germany

No. 46C25—GERMANY AND A TRIP DOWN THE RHINE.

Twenty-five wonderful places in Germany are represented in this set, including as they do a trip down the Rhine; also the beautiful historical spots of this country.

Per 1000..... 6.25 | Per set..... .20

Matsuri Festival, Japan

No. 46C26—TRIP TO CHINA, JAPAN AND THE ORIENT.

Twenty-five views of China and Japan, showing life in the great empires. A splendid set of twenty-five views of China taken during the Boxer Rebellion, together with the wonderful views of Japan, including Iris Garden and interesting views of the Orient, in fact this is the first set of twenty-five views ever made up in a complete set.

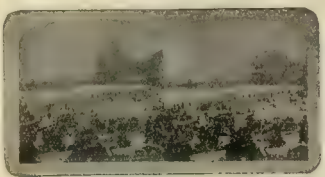
Per 1000..... 6.25 | Per set..... .20

Stereoscopic Views

Old Slave Market, St. Augustine, Fla.

No. 46C15—TOUR THROUGH DIXIE LAND

Twenty-five Views of the principal places through the South, including cotton industries, gathering and shipping cotton and the lives of the darkies—in fact a typical set of 25 magnificent pictures of the lives of the darkies in every sense of the word.
Per 1000..... 6.25 | Per set..... .20



Cliff House, San Francisco

No. 46C16—A TOUR OF THE PACIFIC SLOPE.

Twenty-five Views of California and the Yosemite Valley and a trip to Alaska. There are five Views of Yukon and Alaska which are very interesting; six Views of the Yosemite Valley and six Views of the wonderful sights of this place, together with miscellaneous series of views of the principal points of the Pacific Slope.
Per 1000..... 6.25 | Per set..... .20

Dearborn Street, Chicago

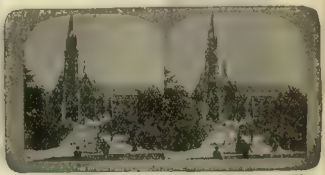
No. 46C17—A TOUR OF THE BIG CITIES OF AMERICA.

Twenty-five Views of New York, Chicago, Philadelphia, Boston and other big cities. This series has been secured with the object of showing a few of the wonderful sights of the large cities. New York City is represented with the bridge, Grant's Tomb and several other places of interest. There are several Views of Chicago, showing the wonderful industrial pictures of that city, together with several Views of its beautiful Park system. Philadelphia is represented with several Views; also Boston and other large cities.
Per 1000..... 6.25 | Per set..... .20

Tower Bridge, London

No. 46C18—A TOUR THROUGH ENGLAND AND FRANCE

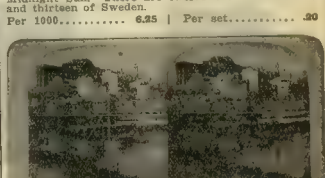
Twenty-five Views of the most historical and celebrated places in both of these interesting countries, identified with the history of the world so closely that no tour of any part of the world is any more interesting.
Per 1000..... 6.25 | Per set..... .20



Oscar Fredrik Church, Gothenburg, Sweden

No. 46C19—TOUR THROUGH NORWAY AND SWEDEN

Twenty-five Views of exceptionally fine Views of a trip through the Land of the Midnight Sun, which perhaps is one of the most interesting sets of Stereoscopic Views in the world, as no country under the sun is so odd, and so interesting as the Land of the Midnight Sun. There are twelve Views of Norway and thirteen of Sweden.
Per 1000..... 6.25 | Per set..... .20



View of Vintimiglia, Italy

No. 46C20—TOUR OF ITALY AND THE SWISS ALPS.

Twenty-five Views of Italy, and the Swiss Alps. These Views include eleven Views of the historical spots of Italy; also a set of the most gorgeous Views ever made of the Swiss Alps. This entire set is considered very fine, inasmuch as the photographs were made by one of the world's most celebrated travelers.
Per 1000..... 6.25 | Per set..... .20

2164B

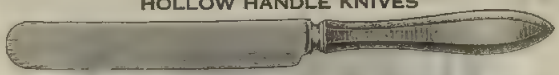
COMMUNITY PLATE

PATRICIAN PATTERN

Bright Finish—50 Year Guarantee.

Beautifully simple—simply beautiful. This exactly expresses that delight which one finds in viewing the Patrician pattern.

HOLLOW HANDLE KNIVES



No. 6611—Medium or table knife, packed six in roll in box. Weight, 1 pound 8 ounces. Length, 9¾ inches. Per dozen..... $21.00

No. 6612 Dessert or luncheon knife, packed six in roll in box. Weight, 1 pound 4 ounces. Length, 8¾ inches. Per dozen..... $20.50

No. 6704—Fruit knife, six in lined gift box. Weight, 1 pound. Length, 6¾ inches. Per dozen..... $20.00

MODELED HANDLE KNIVES

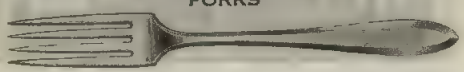
No. 6615—Medium or table knife, packed six in racked box. Weight, 1 pound 9 ounces. Length, 9½ inches. Per dozen..... $14.00

No. 6617—Medium or table knife, cimeter and swaged blades, packed six in racked box. Weight, 1 pound 9 ounces. Length, 9½ inches. Per dozen..... $14.20

No. 6616—Dessert or luncheon knife, packed six in racked box. Weight, 1 pound 5 ounces. Length, 8½ inches Per dozen..... $13.70

No. 6698—Fruit knife, packed six in racked box. Weight, 11 ounces. Length, 6½ inches. Per dozen..$13.00

FORKS



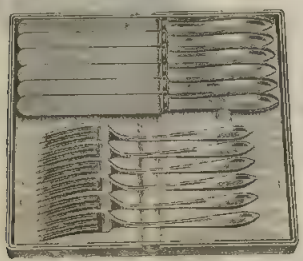
No. 6607—Medium flat fork, packed six in package in box. Weight, 14 ounces. Length, 7½ inches. Per dozen..... $15.00

No. 6613—Medium hollow handle fork, packed six in roll in box. Weight, 1½ pounds. Length, 7¾ inches. Per dozen..... $21.00

No. 6606—Dessert flat fork, packed six in package in box. Weight, 11 ounces. Length, 7 inches. Per dozen..... $14.50

No. 6614—Dessert hollow handle fork, packed six in roll in box. Weight, 1¼ pounds. Length, 7¾ inches. Per dozen..... $20.50

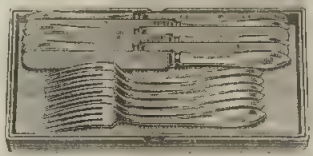
KNIFE AND FORK SETS



No. 6742—Medium or table hollow handle knife and flat fork set. Weight, 2 lbs. 14 oz. Per set.....$18.00

No. 6743—Dessert hollow handle knife and flat fork set. Weight, 2 lbs. 8 oz. Per set.....$17.50

No. 6807—Medium hollow handle knife and hollow handle fork set Weight, 3 lbs. Per set.....$21.00



No. 6803—Medium or table modeled handle knife and flat fork set. Weight, 2 lbs. 9 oz. Per set.....$14.50

No. 6982—Breakfast modeled handle knife and flat fork set. Weight, 2 lbs. 4 oz. Per set.....$14.10

No. 6805—Medium or table modeled handle knife and flat fork set. Knives cimeter and swaged blades. Wt. 2 lbs. 9 oz. Per set.....$14.60

All knife and fork sets are packed in brocade lined gift boxes. The corners of boxes are reinforced and the racks are well fastened.

COMMUNITY PLATE

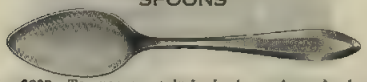
PATRICIAN PATTERN

2164C

Bright Finish—50 Year Guarantee.

Beautifully simple—simply beautiful. This exactly expresses that delight which one finds in viewing the Patrician pattern.

SPOONS



No. 6602—Teaspoons, packed six in package in box. Weight, 9 ounces. Length, 6 inches. Per dozen..$7.50
No. 6603—Dessert spoons, packed six in package in box. Weight, 12 ounces. Length, 7⅛ inches. Dozen..$14.50
No. 6605—Table spoons, packed six in package in box Weight, 1 pound. Length, 8⅛ inches. Dozen...$15.00
No. 6604—Soup spoons, packed six in package in box Weight, 18 ounces. Length, 7¼ inches. Dozen..$15.00

COFFEE SPOONS

For Small Cup Service (Demi Tasse)

No. 6625—Coffee spoons, packed six in blue velvet lined gift box. Weight, 6 ounces. Length, 4⅛ inches. Per dozen $7.50

For Tea, Sherbets, Ices, Sundaes, Etc.

No. 6601—5 o'clock teaspoons, packed six in blue velevt lined gift box. Weight ¾ pounds. Length 5⅛ inches. Per dozen $7.50

ICE CREAM SPOONS

For Sundaes, Sherbets, Ices, Desserts, Etc.

No. 6857—Ice Cream or Sundae spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 5½ inches. Per dozen.....$11.00

No. 6483—Jam Spoon, packed one in a blue velvet lined gift box. Weight, per dozen, 2¼ pounds. Per dozen $15.00

ORANGE SPOONS

For Oranges, Grapefruits, Melons, Etc.

No. 6641—Orange spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 5⅞ inches. Per dozen $11.00

BUTTER KNIFE AND SUGAR SPOON

An Attractive Practical Gift.

No. 6729—Butter knife and sugar spoon set, in blue velvet lined gift box. Weight, 7 ounces. Per set..$2.50

For price of butter knife and sugar spoon priced separately, see page 2164F.

BOUILLON SPOONS

For Bouillon, Consomme and Soups when Served in Cups.

No. 6622—Bouillon spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 4⅞ inches. Per dozen $14.00

ICED TEA SPOONS

For Iced Tea and Coffee, Chocolate, Lemonade, Etc

No. 6629—Iced tea spoons, packed six in blue velvet lined gift box. Weight, 10 ounces. Length, 7⅛ inches. Per dozen $12.00

PIERCED PASTRY SERVERS

For Serving Pie, Cake, French Pastry, Etc

No. 6484—Pierced Pastry Server, packed one in blue velvet lined gift box. Weight, 11 ounces. Length, 10¾ inches. Per dozen.....$48.00

2164D

COMMUNITY PLATE

PATRICIAN PATTERN

Bright Finish—50 Year Guarantee.

Beautifully simple—simply beautiful. This exactly expresses that delight which one finds in viewing the Patrician pattern.

COLD MEAT FORKS

For Serving Sliced Fowl, Cold Meat, Fish, Asparagus, Macaroni and Spaghetti. Also used with the Berry Spoon for Salad Serving.

No. 6667—Cold meat fork. Weight, 6 ounces. Length, 8⅜ inches. Per dozen.....$27.00

For Serving Sliced Fowl, Cold Meat, Sardines, Etc.

No. 6668—Small cold meat fork. Weight, 3 ounces. Length, 6¼ inches. Per dozen.....$21.00

Packed one in blue velvet lined gift box.

BERRY OR SALAD SPOONS

For Serving from Casserole or Baking Dishes. Also used with Meat Fork for Salad Serving.

No. 6620—Berry or salad spoon. Weight, 10 ounces. Length, 9⅛ inches. Per dozen.....$39.00

For Serving from Casserole or Baking Dishes. Also used with Meat Fork for Salad Serving.

No. 6647—Small berry or preserve spoon. Weight, 6 ounces. Length, 7⅝ inches. Per dozen.....$30.00

Packed one in blue velvet lined gift box.

INDIVIDUAL SALAD FORKS

For Salads, French Pastry, Etc.

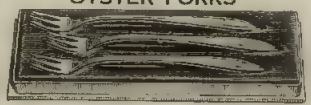
No. 6688—Individual salad forks. Weight, 12 ounces. Length, 6⅛ inches. Packed six in blue velvet lined gift box. Per dozen $14.00

OLIVE SPOONS

For Serving Olives, Pickles, Salted Nuts, Etc.

No. 6656—Olive spoon, packed one in blue velvet lined gift box Weight, 3¾ pounds. Length, 5⅝ inches. Per dozen $21.00

OYSTER FORKS



For Oysters, Clams, Lobsters, Shrimps, Seafood, Cocktails, Etc.

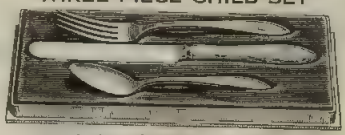
No. 6679—Oyster forks, packed six in blue velvet lined gift box. Weight, 9 ounces. Length, 6⅛ inches. Per dozen $10.00

BUTTER SPREADERS

Used with Individual Bread and Butter Plates.

No. 6697—Butter spreaders, packed six in blue velvet lined gift box. Weight, 15 ounces. Length, 6¼ inches Per dozen $12.00

THREE PIECE CHILD SET



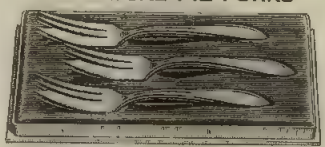
An Appropriate Gift for the Child.

No. 6735—Child's set (spoon, fork and H. H. knife). Weight, 8 ounces. Length of knife, 7⅛ inches. Per set $4.00

No. 6737—Same as above, with flat handle knife. Weight, 7 ounces. Length of knife, 7¼ inches. Per set $3.00

Packed in blue velvet lined gift box.

INDIVIDUAL PIE FORKS



No. 6660—Individual pie forks, packed six in blue velvet lined gift box. Weight, 12 ounces. Length, 7 inches. Per dozen $16.00

COMMUNITY PLATE

PATRICIAN PATTERN

Bright Finish—50 Year Guarantee.

Beautifully simple—simply beautiful. This exactly expresses that delight which one finds in viewing the Patrician pattern.

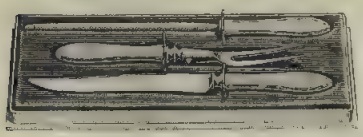
SMALL CARVING SETS

Steak, Foul, or Breakfast Service.

No. 6728—Small steak carving set, packed in blue velvet lined gift box. Weight, 11 ounces. Length of knife, 10 inches. Per pair.....$8.00

No. 6596—Small Steak Carving Set, modeled handle knife. Packed in blue velvet lined box. Weight, 11 ounces. Length of knife, 10 inches. Per pair....$6.00

LARGE CARVING SETS



For Large Roasts, Turkeys, Etc.

No. 6725—Large beef carving set, packed in blue velvet lined gift box. Weight, 1 pound 14 ounces. Length of knife, 15 inches. Per set.....$16.00

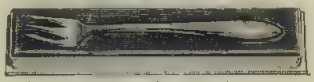
GAME SHEARS

No. 6689—Game shears, packed one in blue velvet lined gift box. Weight, 14 ounces. Length, 10¼ inches. Per pair $10.00

HOLLOW HANDLE CHEESE SERVERS

No. 6815—Hollow handle cheese server, packed one in blue velvet lined gift box. Weight, 6 ounces. Length, 6½ inches. Per dozen.....$30.00

PICKLE FORKS



For Serving Pickles, Olives, Relishes, Etc.

No. 6646—Pickle fork, packed one in blue velvet lined gift box. Weight, 3 ounces. Length, 6⅝ inches. Per dozen $18.00

PIERCED SERVERS

For Serving Tomatoes, Pineapples, Cucumbers, Poaches, or Fried Eggs, Fritters, Waffles, Fish Cakes, Croquettes, Etc.

No. 6690—Pierced server, for tomatoes, poached eggs, etc. Packed one in blue velvet lined gift box. Weight, 5 ounces. Length, 7⅝ inches. Per dozen.....$36.00

LADLES

For Serving Salad Dressing, Whipped Cream and Pudding Sauces.

No. 6715—Salad dressing or cream ladle. Weight, 4 ounces. Length, 5⅝ inches. Per dozen.....$24.00

For Deep Dish Serving of Gravy, Preserved Fruits, Sauces, Etc.

No. 6717—Gravy ladle. Weight, 7 ounces. Length, 6¾ inches. Per dozen.....$30.00

For Serving Soups, Crushed Fruits, Etc.

No. 6721—Medium soup ladle, packed one in blue velvet lined gift box. Weight, 14 ounces. Length, 10⅝ inches. Per dozen $90.00

Packed one in blue velvet lined gift box.

JANNEY, SEMPLE, HILL & CO.

COMMUNITY PLATE

PATRICIAN PATTERN

Bright Finish—50 Year Guarantee.

Beautifully simple—simply beautiful. This exactly expresses that delight which one finds in viewing the Patrician pattern.

SUGAR SPOONS

Desirable for Jam, Jelly, Marmalade, Etc.

No. 6650—Sugar spoon, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 5⅝ inches. Per dozen $15.00

BUTTER KNIVES

Butter Server, an Attractive Practical Gift.

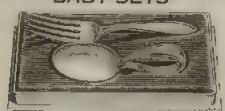
No. 6695—Butter knife, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 7½ inches. Per dozen $15.00

JELLY SERVERS

For Serving Jelly, Cheese, Honey, Etc.

No. 6623—Jelly server, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 6⅛ inches. Per dozen $18.00

BABY SETS



Especially designed to meet the requirements for Bread and Milk and Cereal Feasts.

No. 6738—Baby set (spoon and fork), in blue velvet lined gift box. Weight, 4 ounces. Per set.....$2.00

Also furnished with flat handle spoon.

SUGAR TONGS

No. 6708—Sugar tongs, packed one in blue velvet lined gift box. Weight, 8 ounces. Length, 4½ inches. Per dozen $18.00

HOLLOW HANDLE PIE SERVERS

For serving Pie, Brick Ice Cream, Cake, Etc.

No. 6710—Hollow handle pie or ice cream server, packed one in blue velvet lined gift box. Weight, 8 ounces. Length, 10⅞ inches. Per dozen.....$48.00

CAKE SERVING SETS

No. 6791—Cake knife and Cake Fork in blue velvet lined gift box. Weight, 8 ounces. Per set.....$6.50

CAKE OR BREAD KNIVES

No. 6989—Cake or bread knife, packed one in blue velvet lined gift box. Weight, 4 ounces. Length, 11⅜ inches. Per dozen $48.00

CAKE OR PASTRY FORKS

No. 6990—Cake and pastry serving fork, packed one in blue velvet lined gift box. Weight, 3 ounces. Length, 8¼ inches. Per dozen.....$30.00

BABY SPOONS

No. 6624—Baby spoon (straight handle). Weight, 2 ounces. Length, 4 inches. Per dozen.....$12.00

Especially designed to meet the requirements for Bread and Milk and Cereal Feasts.

No. 6619—Baby spoon (curved handle). Weight, — ounces. Per dozen.....$12.00

Packed one in blue velvet lined gift box.

BABY FORKS

An Ideal Gift for the Baby.

No. 6628—Baby fork, packed one in blue velvet lined gift box. Weight, 2 ounces. Length, 4 inches. Per dozen $12.00

COMMUNITY PLATE

PATRICIAN PATTERN

Bright Finish—50 Year Guarantee.

2164G

ADD-A-PIECE CABINETS

Hand polished brown mahogany and richly lined in deep blue velvet.

Minimum of pieces can be purchased and added to cabinet from time to time.

"Add-a-Piece" Cabinets offer unusually attractive display features while the flexibilty of contents gives them an assured place of useful service in the home.

55-90 Cabinet Illustrated.

36- 60-Piece Cabinet with 45 pc contents (with H. H Knives). Each...$75.00—With M H. Knives. .$72.50
55- 90-Piece Cabinet with 72 pc contents (with H H. Knives). Each...125.00—With M. H. Knives ...118.00
100-200-Piece Cabinet with 140 pc contents (with H. H. Knives). Each... 235 00—With M. H. Knives. ..221.00
200-300-Piece Cabinet with 255 pc contents (with H. H. Knives). Each....400.00—With M. H. Knives... 387.00

Any number of pieces can be arranged for in the chests listed above.

No. 62345 is 36-60 pc. with H. H. Knives.
No. 62346 is 36 60 pc. with M. H. Knives.
No. 60 is Empty Cabinet.

No. 62472 is 55-90 pc. with H. H. Knives.
No. 62473 is 55 90 pc. with M H. Knives.
No. 90 is Empty Cabinet.

SUGGESTED ASSORTMENT

100 to 200 Piece Cabinet—140 Piece Contents.

24 Tea Spoons
6 Table Spoons
12 Dessert Spoons
12 A. D. Coffee Spoons
12 Dinner Knives
12 Dinner Forks
12 Dessert Knives
12 Dessert Forks
12 Ind. Salad Forks
12 Ind. Butter Sp'ders
1 Sugar Spoon
1 Butter Knife
1 Berry Spoon
1 Cold Meat Fork
1 Olive Spoon
1 Cream Ladle
1 Gravy Ladle
1 Pier'd Tomato Server
1 Pastry Server
1 3-pc. Carver
1 2-pc. Carver

No. 62140—With H. H. Knives.....$235.00
No. 62141—With M. H. Knives.....221.00
No. 219—Empty Cabinet.....48 00

26 Pc Leatherette Deluxe Chest

STANDARD CHESTS

No. 6983—26 pc. Leatherette DeLuxe Chest with H. H. Dinner Knives. Each.....$37.00

No. 6984—26 pc. Leatherette DeLuxe Chest with M. H. Dinner Knives. Each..... 33.00

No. 150—Seal Grain Leatherette DeLuxe Chest (Empty). Each... 5.25

No. 6848—26 pc. Solid Mahogany Chest with H. H. Dinner Knives. Each.....$39.00

No. 6947—26 pc. Solid Mahogany Chest with M. H. Dinner Knives. Each..... 35.00

No. 148—Genuine Mahogany Chest with Drawers, (Empty). Each. 7.25

o P Mahogany Chest with Drawer.

JANNEY, SEMPLE, HILL & CO.

2164H

COMMUNITY PLATE

PATRICIAN PATTERN

Bright Finish—50 Year Guarantee.

THE NEW IMPROVED PETIT BUFFET AND CORRECT SERVICE TRAYS

TRAY A

Correct Service Contents.

6 Salad Forks	1 Pickle Fork
6 Butter Spreaders	6 Soup Spoons
	1 Berry Spoon
1 Salad Ladle	1 Cold Meat Fork

Tray A—No. 6691—Per set..$29.50

The Tray is Free.

PETIT BUFFET CONTENTS

1 Butter Knife	1 Sugar Spoon
6 Tea Spoons	6 Table Spoons
6 Knives	6 Forks

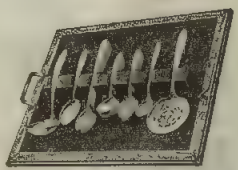
The Tray is Free with Contents.

No. 6584—Petit Buffet with hollow handle dinner knives. Per set $31.75

No. 6580—Petit Buffet with hollow handle desert knives. Per set. 31.25

No. 6585—Petit Buffet with modeled handled dinner knives. Per set 28.25

No. 6581—Petit Buffet with modeled handle desert knives. Per set. 27 85



TRAY B

Correct Service Contents.

1 Jelly Server.	6 Iced Tea Spoons
1 Preserve Spoon	6 Orange Spoons
1 Pierced Server	6 Bouillon Spoons
1 Olive Spoon	

Tray B—No. 6692—Per set..$27.25

The Tray is Free.

These new Trays make very beautiful window and showcase displays. In harmony with any store furnishings. The Petit Buffet and the two Correct Service Trays display a complete selection of Community Correct Service Pieces. Remove the covers and they are ready to work for you at once. The newest clerk shows and sells 26 pieces instead of the half dozen which the prospective customer probably intended to purchase. Your customer gets a valuable tray free when buying a complete set. There has never been a more convenient or more beautiful article to sell on the market.

RIDING SADDLES

Terms for Describing.

Cantle—The upright part of the saddle which forms a back to the seat.

Cinch—Spanish Cincha; a broad saddle girth, usually of horse hair, webbing or cordage, for securing the saddle on the horse; see definitions of rigging.

Fenders—Spanish Rosaderos or Sudaderos; the wide leathers extending from the body of the saddle to the stirrups, to keep the rider's legs from contact with the horse.

Flaps—That part of an English saddle which corresponds with the fenders on the western stock saddle; see above.

Front—The forward curved part of the saddle; the wide bulge acts as a bucking roll.

Gullet—The throat or open part formed by the front; to give room on horse's withers.

Horn or **pommel**—The knob or upward horn-like projection at the front of the saddle; also the highest part of the front, if without horn.

Jockeys—The seat flaps, covering the rigging. The extensions or flaps on sides of seat.

Knee rolls or **puffs**—Used on English men's and ladies' astride saddles, as cushions for the knees.

Lariat strap—A small strap, attached at the right hand side of the front for carrying the lariat rope.

Latigos—Straps for tightening the cinchas.

Latigo tie strings—Used in lacing saddles together and left extra length for ornamentation. Also can be used for tying bundles, coats, etc., to saddle.

Niggerhead—A triangular or round shaped piece of leather with a slot cut in same, in which the end of the tie strap is sometimes secured.

A center fire rig or **single center rig**—Is made with a ring placed in the center of the tree and close to the bar, with a latigo strap on both sides, to tie.

A three-quarter rig, sometimes called **Montana rig**—Is made with a larger ring placed so that the stirrup leather, after it leaves the under side of the bar, passes through the ring; latigo straps to tie on both sides.

A double rig—Has two cinchas with straps to tie or buckle, according to the grade of the saddle front cinch is enough forward the center to escape the stirrup leather; the flank cinch is directly under the cantle.

Rosettes—Small, pinked edge, leather washers, which help to hold the saddle together and prevent the latigo strings from pulling through.

Half seat—Is built up to stirrup leathers. The stirrup leathers pass around the bar free of the seat.

Skirts—Spanish Bastos; that part of the saddle which is attached to the saddle tree bars and forms the covering for the horse's back; made both round and square; lined and unlined; the shorter upper skirt is also called a housing.

Stirrup leathers—The straps for suspending the stirrups from the tree bars.

Stirrup safety hooks—Release the straps when violently pulled to the rear, avoiding dragging if thrown, etc.

Stirrups—The foot-rests suspended from the sides of the saddle to aid in mounting; to balance the rider and ease the horse's gait.

Strainer—A steel reinforcement of the seat and saddle-tree.

Tapaderos—A Spanish name for the leather-hooded stirrups; made in two styles, commonly known as monkey-nose and bull dog.

Tree—The wood framework or body of the stock saddle, consisting of horn or pommel, side bars or seat and cantle; usually covered with oil-tanned beef hide; laced and shrunk on smooth and tightly.

SADDLES

S. & Q. BRAND

Saddles Are Guaranteed to Give Perfect Satisfaction.

Warranted, weight About 42 Pounds.

Tree, improved Taylor, with 13-inch Billings bulge, beef hide cover, 14 to 16-inch seat, steel horn.

Skirts, wool lined, 15 by 29 inches.

Seat, seat, cantle jockeys, front and front jockey one piece. No opening in seat.

Fenders, 10x17½ inches.

Stirrup leathers, 3-inch.

Latigoes, long, 1¾ inches; short, 2 inches.

Stirrups, brass bound leather foot piece laced on.

Cinches, fish twine front, 40 X flank.

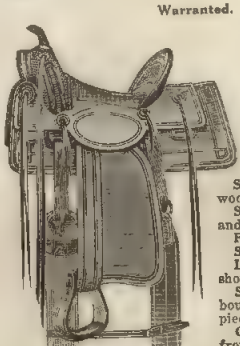
No. 3000—Double cinch. Each $151.40

No. 3005—Three-quarter single cinch. Each... $141.80

Double, No. 3040X fish twine front, 3 ply web flank.

Single, No. 24 California hard twist cotton with safes and tongues.

Warranted.



Rawhide Bound Front and Cantle,

Braided Horn.

Wt., about 37 lbs.

Tree, Buster, beef hide cover, steel horn 13½ to 16 inches, bulge 16 inches.

Skirts, 14x29 inches, wool lined.

Seat, full; jockey, seat and cantle one piece.

Fenders, 8½x17½ in.

Stirrup leathers, 3 in.

Latigoes, long, 1¾ in.; short, 2 inches.

Stirrups, No. 37 brass bound, laced leather foot piece.

Cinches, fish twine front, No. 45X flank.

No. 3100—Double cinch. Each $135.00

No. 3105—Three-quarter or Spanish single cinch. Each 128.20

SADDLES

S. & Q. BRAND

Saddles Are Guaranteed to Give Perfect Satisfaction.

Warranted.

Weight, about 35 pounds.

Tree, Fremont; beef hide cover, steel horn 14 to 15½ inches; size bulge 13½ inches.

Skirts, 13½x28 inches, wool lined.

Seat, loop on ¾ rig; full on double rig; seat, jockey and cantle one piece.

Fenders, 8¼x17 in.

Stirrup leathers, 3 in.

Latigoes long, 1¾ in.; short, 1¾ inches.

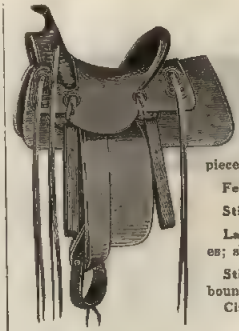
Stirrups, No. 31 brass bound leather foot pieces.

Cinches, No. 3040X on double, 58-strand fish twine, with safes and tongues on ¾ rig.

No. 3090 Double cinch. Each $129.20

No. 3095—Three-quarter or Spanish cinch. Each 121.20

Warranted.



Heavy Swell Fork—Steel Horn.

Weight, about 35 lbs.

Tree, Buster, beef hide cover, steel horn 14 to 15½ inches; bulge 16 inches.

Skirts, 14x28 inches, wool lined.

Seat, full; jockey, seat and cantle one piece.

Fenders, 10x17½ inches.

Stirrup leathers, 3 inches.

Latigoes, long, 1¾ inches; short, 1¾ inches.

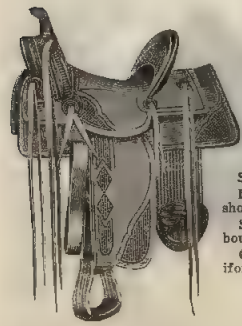
Stirrups, No. 31 brass bound, leather foot pieces.

Cinches, on double 3045.

No. 3140—Double cinch. Each $131.40

No 3145—Three-quarter or Spanish cinch. Each 127.20

Warranted.



Weight, about 37 lbs.

Tree, Buster, beef hide cover, steel horn, 14 to 16 inches, bulge 16 inches.

Skirts, 14x28 in., wool lined.

Seat, full; seat, jockey and cantle one piece.

Fenders, 8¼x17 inches.

Stirrup leathers, 3 in.

Latigoes, long, 1¾ in.; short, 1¾ inches.

Stirrups, No. 32 brass bound, leather foot pieces

Cinches, 24-strand California cotton, with safes.

No. 3130—Double cinch. Each $187.80

No. 3135—Three-quarter or Spanish single cinch. Each 121.40

Warranted.

Weight, about 38 pounds.

Tree, Livingston, beef hide cover, steel horn, 14 to 16-inch seat, 17-inch bulge.

Skirts, 14x28 inches, wool lined.

Seat, full; seat, jockey and cantle one piece.

Fenders, 8½x17 inches.

Stirrup leathers, 3 inches.

Latigoes, long, 1¾ inches; short, 1¾ inches.

Stirrups, brass bound, leather foot pieces.

Cinches, No. 3040X on double rig, 24 California cotton, with safes on ¾ single rig.

No. 3150—Double cinches. Each $131.20

No. 3155—Three-quarter or single cinch. Each. 126.20

SADDLES

S. & Q. BRAND
Saddles Are Guaranteed to Give Perfect Satisfaction.

Warranted.

Weight, about 38 pounds.

Tree, Buster, beef hide cover, steel horn, 14 to 16-inch seat, 16-inch bulge.

Skirts, 14x28 inches, wool lined.

Seat, full; seat, jockey and cantle one piece.

Fenders, 8½x17 inches.

Stirrup leathers, 3 inches.

Latigoes, long, 3½ inches; short, 1¾ inches.

Stirrups, galvanized iron bound.

Cinches, No. 540 on double rig; fish twine with safes on single.

No. 3160—Double cinches. Each $115.20

No. 3165—Three-quarter single cinch. Each... 110.20

Weight, about 28 lbs.

Tree, hide cover, steel horn, 14 to 15½-inch seat, 14-inch bulge.

Skirts, 13x26 inches, wool lined.

Fender, 8¼x16 inches.

Stirrup leathers, 2½ inches.

Latigoes, long, 1½ inches; short, 1½ inches.

Stirrups, galvanized iron bound.

Cinches, No. 540.

No. 3240—Double cinch. Each $93.20

No. 3245—Three-quarter single cinch. Each.... 88.20

Weight, about 30 lbs.

Tree, Broadside, beef hide cover, steel horn 14 to 15½ inches, size bulge 16½ in.

Skirts, 13x 27 in. wool lined.

Seat, full, seat, jockey and cantle 1 piece.

Fenders, 8¼x17 in.

Stirrup leathers, 3 inches.

Latigoes, long, 1½ inches; short, 1¾ inches.

Stirrups, No. 31 brass bound.

Cinches, No. 540 on double—58 fish twine, on ¾ rig.

No. 3220—Double cinch. Each $100.00

No. 3225—Three-quarter or Spanish cinch. Each 93.40

Weight, about 30 lbs.

Tree, Crow, hide cover, steel horn, 14 to 15½-inch seat, 14½-inch bulge.

Skirts, 13x 26 inches, wool lined.

Seat, full; seat, jockey and cantle one piece.

Fenders, 8¼x17 inches.

Stirrup leathers, 3 inches.

Latigoes, long, 1½ inches; short, 1½ inches.

Stirrups, No. 31, galvanized bound.

Cinches, No. 3040 on double; No. 58 fish twine on ¾ rig.

No. 3250—Double cinches. Each $98.00

No. 3255—Three-quarter Spanish cinch. Each. 82.80

S. & Q. BRAND

Saddles Are Guaranteed to Give Perfect Satisfaction.

Weight, about 27 pounds.

Tree, canvas, steel horn, 14½ and 15-inch seat, 13-inch bulge.

Skirts, 13x25 inches.

Seat, full; seat, jockey and cantle one piece.

Fenders, 8x15 inches.

Stirrup leathers, 2½ inches.

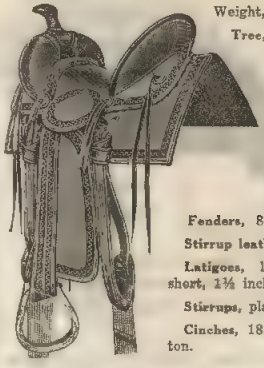
Latigoes, long, 1½ inches; short, 1½ inches.

Stirrups, plain wood ox bow.

Cinches, No. 540 Mexican front, back band flank.

No. 3310—Double cinches. Each $81.40

No. 3315—Three-quarter single cinch. Each.... 76 00



Weight, about 21 pounds.

Tree, canvas, steel horn, 14½-inch seat, 13-inch bulge.

Skirts, 12x23 inches, felt lined

Seat, full; seat, jockey and cantle one piece.

Fenders, 8x15 inches.

Stirrup leathers, 2½ inches.

Latigoes, long, 1½ inches; short, 1½ inches.

Stirrups, plain wood ox bow.

Cinches, 18-strand Texas cotton.

No. 3330—Double cinches. Each $68.00

No. 3335—Three-quarter single cinch. Each .. 62.00

Weight, about 21 pounds.

Tree, canvas, steel horn, 14½-inch seat, 13-in. bulge.

Skirts, 12x23 inches, wool lined

Seat, full; seat, jockey and cantle one piece.

Fenders, 8x15 inches.

Stirrup leathers, 2½ inches.

Latigoes, long, 1½ inches; short, 1½ inches.

Stirrups, plain, wood ox bow.

Cinches, 18-strand Texas cotton.

No. 3320—Double cinches. Each $77.40

No. 3325—Three-quarter single cinch. Each.... 70.20

Weight, about 19 pounds.

Tree, canvas, steel horn, 14½-inch seat.

Skirts, 11½x21½ inches, wool lined.

Seat, full; seat, jockey and cantle one piece.

Fenders, 8x15 inches.

Stirrup leathers, 2 in.

Latigoes, long, 1½ in.; short, 1½ inches.

Stirrups, No. 10, Texas bolt, 2 inches.

Cinches, 20-strand Texas cotton.

No. 3350—Double cinches. Each.....$52.00

No. 3355—Three-quarter single cinch. Each.... 49.60

SADDLES

S. & Q. BRAND

Saddles Are Guaranteed to Give Perfect Satisfaction.

No. 3700

Weight, about 12 pounds.

Tree—Special, nickel horn, canvas cover; 14 inches; pearl or tan color glove leather, silk quilted seat; wool lined underskirts; tie latigoes; 15-strand Texas cotton cinches.

No. 3700—Single cinch.
Each $30.20

VACUUM OIL COMPANY

61 Broadway, NEW YORK, U. S. A.

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PORTLAND, ME.
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410 Main Street

Lubricating Oils

A grade for each type of service

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136 West Main Street
MINNEAPOLIS, MINN.
609 Second Avenue, South
INDIANAPOLIS, IND.
11 South Meridian Street
KANSAS CITY, MO.
10 East Seventeenth Street
DALLAS, TEXAS
Main and Lamar Streets

Specialists in the Manufacture of High-Grade Lubricating Oils for Every Class of Machinery—Obtainable Everywhere in the World

Correct Lubrication in the colliery is directed towards: (1) Maximum production at minimum cost (2) Uninterrupted operation and (3) Safety of life and equipment, both above and below ground.

Colliery lubrication may be termed correct when it tends to bring about a high degree of safety and produces the greatest profitable returns—gain over cost.

Mine cars hauled in longer trips by the same locomotives, ventilating fans and mine hoists operating without interruption, coal cutters and loaders free from excessive wear and replacements, in short the entire equipment of the mine standing up to its duty for an extended term of years: these are some of the gains resulting from Correct Lubrication.

So vastly greater are these gains than the cost of lubrication that it is a mistake to permit price per gallon to govern the selection of lubricants. Furthermore, the fact that correct lubricants need not be used in such great quantities as unsuitable grades, nearly always compensates for any difference in price.

The Vacuum Oil Company, specializing in the field of Correct Lubrication, manufactures lubricants fitted exactly to specific purposes. Science and field experience have combined to assure that the recommendations which follow are correct,—i. e., such as to produce the greatest possible gain in profitable returns. Improved operation and increased profits during years of practical application have demonstrated the value of these lubricants.

Not content with the sale alone of correct lubricants the Vacuum Oil Company seeks to insure to its customers the attainment of Correct Lubrication through the analysis of their problems, offering guidance and assistance in the selection and correct application of lubricants.

By addressing the nearest branch of the Vacuum Oil Company, the mine-operator may secure the services of an engineer experienced in coal mine lubrication, who will study the needs of the mine and report in writing the situation as he finds it, together with full recommendations as to what lubricants and method of application will be conducive to highly profitable operation.

On the following pages are given specific recommendations for the correct lubrication of the main items of coal mine equipment. This is followed by a description of each lubricant with a summary of its purpose.

Attention is also called to the list of publications of the Vacuum Oil Company which treat of the lubrication of various items of equipment found in the colliery.

MINE CAR LUBRICATION

The tabulation of recommendations which follows is presented in simple form to cover the great majority of mine cars employed in American practice.

The lubricants named have been developed especially for the purposes assigned and are of high lubrication value, possess suitable melting or congealing temperatures to meet the common range of climatic conditions, and strongly resist the washing effect of water, where encountered. All of the lubricants recommended have proven their value by years of satisfactory service under the most trying conditions.

Recommendations: For Wheel or Journal Bearings of Rolling Stock
(Mine Cars, Locomotives, Power Shovels, etc.)

For plain cavity wheels and for roller or ball bearing wheels or journal boxes.	Grease gun or grease packed	Voco Mine Car Grease Medium
For felt packed wheels or wool waste packed journal boxes.	Hand packed with make-up applied by oil can	Gargoyle Dark Lubricating Oil LM or, as alternative, Voco Mine Car Grease Medium

When ordinary "black oil" is used it is necessary to employ several oilers or car greasers, who are kept busy during the entire working period each day. Large quantities of the black oil are used, most of which is wasted. The only excuse for using such an inferior lubricant as black oil is its cheapness. This is offset by the fact that the correct lubricant is far more efficient, resulting in low cost of lubrication, less repair costs and longer life of equipment.

TREDICK OIL & GREASE CO., Inc.

General Office and Works
2642-44-46-48 North Mascher St.
PHILADELPHIA, PA.

Tredick's Lubricants

Products

Mine Car Grease; Roller Bearing Grease; Wool Yarn Grease; Wool Yarn Elastic Grease; Cable Grease; No. 6 Lubricant; No. 5 Lubricant; Cup Greases and Oils for every purpose.

Tredick's Lubricants

Fill the requirements of every coal mine by increasing the efficiency, reducing friction and prolonging the life of all working parts.

Our long experience in making lubricants for the mine enables us to produce Oils and Greases to correctly do your work at the minimum of cost per ton output.

TREDICK'S MINE CAR GREASE for cavity type wheels is made up in various densities to meet your special requirements. It is of a semi-fluid consistency and will positively not drip or run out of your wheels. It is applied with a grease gun, which forces the lubricant into all moving surfaces and will positively eliminate cut-out wheels and increase the haulage efficiency by 30 to 40 per cent. It is not affected by heat, cold or mine water.

TREDICK'S ROLLER BEARING GREASE is a special product made for the spiral and solid roller bearing wheel. Absolutely prevents bearings from wearing and will last an indefinite time. Once used always used.

WOOL YARN ELASTIC GREASE is especially adapted for journal lubrication of electric mine locomotives and journal boxes for car wheels, etc. It is only necessary to lubricate the journals on the average of once a week by the use of this lubricant. Will absolutely eliminate the cutting of brasses.

TREDICK'S WOOL YARN is best adapted for the lubrication of bearings where the feed is downward. Made up of a special Wool Yarn and saturated with our No. 6 or No. 5 Lubricant. It will not glaze and always allows a steady flow of grease to reach the bearing.

NO. 6 LUBRICANT is used as a renewer for our Wool Yarn or Wool Yarn Elastic. Also for all Ring Oiling Bearings and on Air Compressors and Air Hammers. It will not gum or carbonize.

NO. 5 RENEWER is used to saturate Wool Yarn or Wool Yarn Elastic greases.

TREDICK'S CUP GREASES are made from the highest grade Pennsylvania oils and will do the same amount of work as two or three pounds of the ordinary lubricant.

Get Our Prices Before Signing Your Next Contract.

TREDICK GREASES AND OILS FOR MINE SERVICE

Backed by 25 Years' Experience

Chart of Recommendations

Mine Car Wheels (Plain Cavity Type)
- Tredick's Light Mine Car Grease
- Tredick's Medium Mine Car Grease
- Tredick's Heavy Mine Car Grease

Mine Car Wheels (Roller Bearing Type)
- Tredick's Heavy or No. 3 for Hyatt Roller Bearings
- Tredick's No. 2 or No. 3 for Solid Rollers
- Tredick's No. 1½ for Timken Roller Bearings

Haulage Locomotives
- Tredick's No. 5 or No. 6 Wool Yarn or Elastic
- Tredick's No. 1 or No. 2 for Ball Bearings

Chain Machines
- Tredick's No. 5 or No. 6 Greases
- Tredick's No. 1 Cup Grease

Gears and Cables
- Tredick's Gear and Cable Greases

Mine Pumps
- Tredick's Cup Grease
- Tredick's Plunger Grease

Mining Machines
- Tredick's No. 1 Cup Grease
- Tredick's Light or Medium Mine Car Wheel Grease or Tredick's No. 6 or No. 5 Liquid Grease.

Air Compressors
- Tredick's Monarch Cylinder Oil
- Tredick's No. 6 Light Liquid Grease
- Tredick's Ajax Engine Oil

Fans, Ventilating
- Tredick's No. 6 Light Liquid Grease
- Tredick's No. 0 or No. 1 Density Grease

Shaker Screens
- Tredick's No. 1 or No. 0 Density Grease
- Tredick's No. 2 Density Grease

Conveyors
- Use Tredick's No. 1 Density Grease.

Sheaves
- Equip with Tredick's Steel Funnel Cups and use Tredick's No. 3 Density Grease.

MINE LOCOMOTIVE LUBRICATION

The cylinders of steam locomotives used in coal mining operate on wet steam of moderate pressure The use of hydrostatic lubricators is almost universal for this service. The use of a medium bodied, compounded cylinder oil is required.

Recommendations: Steam Locomotive Cylinders

Steam Cylinders	Force feed or hydrostatic lubricator	Gargoyle Valve Oil

In compressed air locomotives the cylinders operate cold, due to the air expansion, requiring an oil of low pour test. A very small feed of the correct oil is sufficient for satisfactory cylinder lubrication.

Recommendations: Compressed Air Locomotive Cylinders

Air Cylinders	Force feed or air compressor sight feed lubricator	Gargoyle Arctic Oil C

On electric locomotives the motor bearings should be so lubricated that oil or grease will not reach the motor windings, since this is a serious cause of damage.

Recommendations: Motors of Electric Locomotives

Plain bearings	Ring oiled or wick feed oiled	Gargoyle Etna Oil Heavy Medium
Plain bearings	Waste packed	Gargoyle Dark Lubricating Oil LM
Plain bearings	Compression grease cups or grease packed	Voco Cup Grease No. 3
Ball or roller bearings	Grease packed	Voco Mine Car Grease Medium

The engines of gasoline locomotives are of carburetor type. The Automotive Chart of Recommendations issued annually by the Vacuum Oil Company indicates the correct lubricant for each model

Mine locomotive journals are subject to the same recommendations as the corresponding types of car journals—see above.

Other bearings should be lubricated as follows:

Recommendations: Mine Locomotives—Miscellaneous Bearings

Plain bearings	Wick feed	Gargoyle Etna Oil Heavy Medium
Plain bearings	Splash oiled, waste packed or oil can	Gargoyle Dark Lubricating Oil LM
Plain bearings	Compression grease cups or grease packed	Voco Cup Grease No. 3
Ball or roller	Grease packed	Voco Mine Car Grease Medium

Gears of mine locomotives require effective lubrication to avoid rapid wear. When enclosed, the gear case should be kept in good condition.

Recommendations: Mine Locomotive Gears

Enclosed gears	Splash	Gargoyle Dark Lubricating Oil LM
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855

COAL LOADER LUBRICATION

These machines should receive careful attention to avoid wear and repairs. The following recommendations will apply to any type of coal loading machine.

Recommendations: Coal Loaders

Bearings	Ring, wick feed or drop feed oiled	Gargoyle Etna Oil Heavy Medium
Bearings	Hand oiled	Gargoyle Dark Lubricating Oil LM
Bearings	Compression grease cups	Voco Cup Grease No. 3
Enclosed gears	Splash or bath	Gargoyle Dark Lubricating Oil LM
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Chains and Sprockets	Hand oiled	Gargoyle Dark Lubricating Oil LM

POWER SHOVELS

Power shovels, of steam, electric and compressed air types, whether used for surface or underground work, operate more smoothly, respond to the operating levers more promptly and are less subject to wear when correctly lubricated.

Recommendations: Power Shovels

Steam Cylinders	Force feed or hydrostatic lubricator	Gargoyle Valve Oil
Air Cylinders	Force feed or air compressor lubricator	Gargoyle Arctic Oil C
Bearings	Wick feed, drop feed or ring oiled	Gargoyle Etna Oil Heavy Medium
Bearings	Hand oiled	Gargoyle Dark Lubricating Oil LM
Bearings	Compression grease cups or grease packed	Voco Cup Grease No. 3
Open Gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Wire Cables	Bath or brush (apply hot)	Gargoyle Product 8855
Chains	Hand oiled	Gargoyle Dark Lubricating Oil LM

PNEUMATIC AND ELECTRIC TOOLS

A number of small compressed air and electrically driven tools are used in modern coal mining, for drilling and other purposes. These tools are of many types. Most of them are capable of giving a long period of service if cared for, but soon become useless if not properly lubricated and kept clean internally.

Recommendations: Pneumatic Tools, Jackhamers, Stopers, Etc.
(Also for Pneumatic Coal Punchers or Pick Machines)

Cylinders and connected internal parts	Special lubricators	Gargoyle Arctic Oil C
Rotating device and other parts	Hand application or grease cups	Voco Cup Grease No. 3

(Note. Due to variations in design, certain makes of pneumatic tools depart from the above recommendation. In such cases, the "Engine Builders' Book," carried by salesman, should be consulted).

COAL CUTTING MACHINES

Heavy wear, motor troubles and broken chains resulting from the operation of coal cutting machines may be largely prevented by correct lubrication. While it is impossible to group all types of machines together, the following recommendations are generally applicable. Special problems should be referred to the Engineering Staff of the Vacuum Oil Company.

Recommendations: Coal Cutting Machines

Air cylinder and turbines	Special lubricators	Gargoyle Arctic Oil C
Electric motor bearings	Ring oiled or with wick feed	Gargoyle Etna Oil Heavy Medium
Electric motor bearings	Compression grease cups	Voco Cup Grease No. 3
Other bearings of machine	Splash, drop feed, wick feed or hand	Gargoyle Etna Oil Heavy Medium
Other bearings of machine	Compression grease cups	Voco Cup Grease No. 3
Enclosed gears and clutch	Splash or bath	Gargoyle Etna Oil Heavy Medium
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Worm drive gears	Bath	Gargoyle Valve Oil
Worm drive gears	Bath (case not tight)	Voco Cup Grease No. 3
Cutter chains, sprockets and disc bearings	Hand application while hot	Voco Mine Car Grease Medium

It frequently occurs that black strap, black oil or some inferior grade of heavy oil is used for open gears and cutter chains, and through the carelessness or ignorance of the operator, this same oil gets into the bearings of the electric motor, or in the gear or clutch bath. This practice always ends in an early break-down of the machine with consequent costly repairs and renewals.

SHAFTING AND GEARS IN THE BREAKER

The use of automatic lubricating appliances is urged in order that coal dust may be more effectively excluded from the bearings and continuous lubrication be maintained. Bottle oilers and wick feed oilers are particularly serviceable for this purpose.

Recommendations: Shafting, Gears and Chains in the Breaker

Bearings	Ring or collar oiled bearings, and plain with bottle or wick feed oilers	Gargoyle Etna Oil Heavy Medium
Bearings	Hand application	Gargoyle Dark Lubricating Oil LM
Bearings	Compression grease cups	Voco Cup Grease No. 3
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Chains and sprockets	Hand application	Gargoyle Dark Lubricating Oil LM
Silent chain drives	Bath or hand oiled	Gargoyle Crank Case Oil

COAL CRUSHERS

These heavy duty machines, generally grease lubricated, require ample lubrication to prevent rapid wear. The use of oil, applied by wick feed oilers, has proven very effective.

Recommendations: Coal Crushers

Bearings	Wick feed oilers, drop feed oilers or hand application	Gargoyle Dark Lubricating Oil LM
Bearings	Compression grease cups	Voco Cup Grease No. 3
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855

SCREENS AND JIGS OR WASHERS

Eccentrics and cams of shaker screens are often difficult to keep cool. The main problem is that of keeping coal dust out, which is accomplished by a constant supply of suitable grease. The following recommendations cover all of the parts entering into the construction of the various types of screens and jigs.

Recommendations: Screens (Revolving and Shaker) and Jigs or Washers

Bearings	Ring oiled bearings or plain with drop feed, wick feed or bottle oilers	Gargoyle Etna Oil Heavy Medium
Bearings	Hand application	Gargoyle Dark Lubricating Oil LM
Bearings and eccentrics	Compression grease cups	Voco Cup Grease No. 3
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Open chains and sprockets	Hand application	Gargoyle Dark Lubricating Oil LM
Silent chains and sprockets	Bath or hand oiled	Gargoyle Crank Case Oil

CONVEYORS AND ELEVATORS

Continuous operation of this equipment is essential to the production of coal. Neglect of its lubrication may at any time cause serious loss. Correct lubricants, applied by automatic means, will greatly increase the reliability of operation of this equipment.

Recommendations: Conveyors and Elevators

Bearings	Ring oiled bearings or plain with bottle, wick feed, or drop feed oilers	Gargoyle Etna Oil Heavy Medium
Bearings	Hand application	Gargoyle Dark Lubricating Oil LM
Bearings	Compression grease cups	Voco Cup Grease No. 3
Open gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Plain bearing wheels	Hand application	Gargoyle Dark Lubricating Oil LM
Cavity and roller bearing wheels	Grease gun	Voco Mine Car Grease Medium
Links of conveyor chains	Lubricator or hand application	Gargoyle Dark Lubricating Oil LM
Rollers of belt conveyors	Compression grease cups	Voco Cup Grease No 3
Wire cables	Bath or brush (apply hot)	Gargoyle Product 8855

CAR DUMPING MACHINERY

The conditions affecting lubrication of these parts are severe: Irregularity of operation and exposure to sun, rain, freezing temperatures and coal dust.

When an oil is used it is nearly always applied by hand. A closed oil can should be used, and the oil holes in bearings should be covered. Wick feed oil cups can often be used to advantage. The oil used should flow readily at the low temperatures encountered in the winter.

Recommendations: Car Dumping Machinery

Steam cylinders	Force feed or hydrostatic lubricator	Gargoyle Valve Oil
Air cylinders	Force feed or compressor sight feed lubricator	Gargoyle Arctic Oil C
Electric motor bearings	Ring oiled	Gargoyle Etna Oil Heavy Medium (Summer) Gargoyle Arctic Oil C (Winter Exposure)
Other bearings	Wick feed oilers	Gargoyle Etna Oil Heavy Medium
Brake levers, trunnions, etc.	Hand application Compression grease cups	Gargoyle Dark Lubricating Oil LM Voco Cup Grease No. 3
Gears	Paddle or brush (apply hot)	Gargoyle Product 8855

VENTILATING FANS AND BLOWERS

The failure of ventilating fans must be avoided. Their correct lubrication is not difficult, but highly necessary. The following recommendations, both as to method and lubricant, should be observed to insure certainty of operation.

Recommendations: Ventilating Fans

Steam engine cylinders	Force feed or hydrostatic lubricators	Gargoyle Valve Oil
Bearings of steam engine	Circulation lubrication	Gargoyle DTE Oil Light
Bearings of engine or electric motor and ventilating fan	Ring oiled bearings or plain with bottle, wick or drop feed oilers	Gargoyle Etna Oil Heavy Medium
Bearings of engine and ventilating fan	Compression grease cups	Voco Cup Grease No. 3
Silent chains	Bath or hand oiled	Gargoyle Crank Case Oil

MINE PUMPS

Many pumps in actual operation have become worn until they are delivering only a small fraction of the quantity that they should, and are consuming excessive power. This might have been avoided through the practice of correct lubrication.

Recommendations: Mine and Other Pumps—Direct Acting Steam or Air Driven Pumps

Steam cylinders	Force feed or hydrostatic lubricators	Gargoyle Valve Oil
Air cylinders	Force feed or air compressor lubricators	Gargoyle Arctic Oil C
Water plungers, outside packed	Swab	Voco Plunger Pole Grease
Other parts	Hand application	Gargoyle Etna Oil Heavy Medium

Triplex Plunger Pumps

Bearings	Bottle, wick feed or drop feed oilers or hand application	Gargoyle Etna Oil Heavy Medium
Bearings	Compression grease cups	Voco Cup Grease No. 3
Plungers	Swab	Voco Plunger Pole Grease
Gears	Paddle or brush (apply hot)	Gargoyle Product 8855

Centrifugal Pumps

Bearings	Ring oiled bearings or plain with bottle, wick feed or drop feed oilers	Gargoyle Etna Oil Heavy Medium
Bearings	Compression grease cups	Voco Cup Grease No. 3

STEAM PIPE LINE PROTECTION

Pipe line corrosion, which is responsible for heavy repair and replacement expenses, is largely avoided by the introduction of a small quantity of steam cylinder oil into the steam lines leaving the boiler plant.

Recommendations: Pipe Line Protection

Steam pipes leaving boiler plant	Hydrostatic lubricator	Gargoyle Valve Oil

STEAM CYLINDER LUBRICATION

Steam cylinder lubrication is such a broad subject that it cannot be fully discussed here. See list of Vacuum Oil Company publications on a later page.

Recommendations: Steam Cylinders

Dry steam (or superheated not above 600° F.) over 100 lbs pressure	Force feed or hydrostatic lubricators	Gargoyle Cylinder Oil 600 W
Wet steam conditions	Force feed or hydrostatic lubricators	Gargoyle Valve Oil
Low pressure cylinders of compound engines	Force feed or hydrostatic lubricators	Gargoyle Cylinder Oil Rarus

BEARING LUBRICATION OF RECIPROCATING ENGINES

Oil selection for steam engine bearing lubrication is based on the method of application. A light bodied, specially durable oil is required for circulation or splash systems. Methods in which the oil serves its purpose only once call for an oil of high lubricating value. Where grease is applied by compression grease cups a high quality cup grease is necessary.

Recommendations: Steam Engine Bearings and Guides

Bearings and guides	Circulation or splash	Gargoyle D.T.E. Oil Light
Bearings and guides	Wick feed or drop feed oilers, single or multiple	Gargoyle Etna Oil Heavy Medium
Bearings and guides	Compression grease cups	Voco Cup Grease No. 3

ELECTRICAL EQUIPMENT IN THE POWER PLANT

Bearings of electric motors, generators, rotary converters and motor-generators are nearly always of the ring oiled type, the exceptions being plain bearings in a few machines of the old type, and bearings provided for circulation lubrication in generators of very large size. These bearings are all constructed with small clearances and are carefully fitted and lined up. This high class of equipment will last indefinitely if properly lubricated.

Recommendations: Electrical Equipment—Generators, and Rotary Converters or Motor Generators

Bearings	Ring oiled bearings, or plain with bottle, wick feed or drop feed oilers	Gargoyle Etna Oil Heavy Medium or Gargoyle DTE Oil Light (corresponding to driving unit)
Bearings	Circulation oiling	Gargoyle DTE Oil Light

Electric Motors

Bearings	Ring oiled	Gargoyle Etna Oil Heavy Medium
Bearings	Ring oiled (winter exposure)	Gargoyle Arctic Oil C
Bearings	Compression grease cups	Voco Cup Grease No. 3

AIR COMPRESSOR LUBRICATION

A high quality oil is essential to avoid carbon formation, and to make it possible to maintain a lubricating and sealing oil film on the compressor cylinder walls with the least possible feed. By this means the accumulation of impurities in cylinder and valve passages is reduced to a minimum. The suction air should be filtered, where possible, to prevent the entrance of dust Close regulation of oil feed is most easily maintained by the use of a mechanically operated force feed lubricator.

Recommendations: Air Compressors

Air cylinders	Force feed or compressor sight feed lubricator	Gargoyle DTE Oil Heavy Medium
Bearings	Ring oiled bearings, or plain with circulation, splash, bottle, wick feed or drop feed oilers	Gargoyle DTE Oil Heavy Medium

HOIST LUBRICATION

Reliability of the mine hoist is essential. Continuity and economy of production, and the safety of all men in the shaft mine depend upon its unfailing operation. No pains or expense are spared to prevent its shut-down.

Some of the measures that tend to certainty of hoist operation will be enumerated:

Correct high grade steam cylinder oil applied by reliable mechanically operated force feed lubricator.
Separators in the steam line, drained by automatic steam traps.
Correct high quality oil on electric motor bearings, with oil level gage on each ring oiled bearing, marked with the correct oil level.
Correct high quality bearing oil fed by positive means and introduced to the low pressure side of the bearing.
Chamfering the edges of bearing parts, avoiding all unnecessary grooves, and easing away the edges of necessary grooves and chamfers
Correct adhesive lubricant on gears, applied hot.
Wick or other automatic oilers on head sheaves, etc., supplying a heavy bodied, non-congealing oil.
Adhesive protective coating for cables

Recommendations: Hoisting and Cable Traction Machinery

Steam Cylinders

Variable loads, all steam conditions	Force feed or hydrostatic lubricators	Gargoyle Valve Oil

Electric Motors

Bearings	Ring oiled	Gargoyle Etna Oil Heavy Medium

Other Parts of Hoisting Equipment

Bearings	Force feed lubricators, wick feed or drop feed oilers	Gargoyle Etna Oil Heavy Medium
Bearings	Compression grease cups	Voco Cup Grease No. 3
Gears	Paddle or brush (apply hot)	Gargoyle Product 8855
Sheaves	Wick feed or hand application	Gargoyle Dark Lubricating Oil LM
Sheaves	Compression grease cups	Voco Cup Grease No. 3
Wire cables	Bath or brush (apply hot)	Gargoyle Product 8855
Cage guides	Wick feed or Swab	Gargoyle Dark Lubricating Oil LM

CORRECT LUBRICANTS FOR THE COLLIERY

Each of the lubricants recommended herein have been selected to fulfill the practical requirements of various machines and conditions of service. The correctness of each recommendation has been demonstrated by years of satisfactory performance.

The actual conditions existing in collieries have been carefully considered in order to accomplish the greatest profitable returns from correct lubrication. These returns consist of reduced cost of lubricants used over a period of time, improved smoothness and continuity of operation, power saving, reduction of wear and repairs and increased life of the equipment.

The various brands that have been recommended will be briefly described and their uses summarized.

Gargoyle Dark Lubricating Oil LM is a pure mineral oil possessing the heavy body and high lubricating value

necessary to render it effective when aplied to bearings by hand. This oil remains fluid at low temperatures and, therefore, retains its usefulness as a lubricant for bearings exposed to cold weather.

This oil is recommended for the lubrication of car wheels having a felt packed cavity, for waste packed car journals, motor axle bearings, etc:, and for hand oiled bearings of coal loaders, power shovels, transmission shafting and crushers, screens, conveyors and elevators, hoist sheaves, etc. It is also recommended for the splash or bath lubrication of enclosed gears on locomotives and coal loaders and for open chains and sprockets on coal loaders, screens, jigs and conveyors, and for application by wick feed or swab to the cage guides of mine hoists.

Gargoyle Etna Oil Heavy Medium is a pure mineral oil of the high quality and correct body for the efficient lubrication of the great majority of machine bearings where the oil is applied by an automatic method, assuring regularity and economy.

This oil is recommended for ring oiled bearings of electric motors and other machines, for use in wick feed oilers and bottle oilers, and for hand application on coal cutters, mine pumps and shop equipment. It is also recommended for the lubrication of bearings of electric tools, for the bath lubrication of enclosed spur gears and for hand application on light duty open gears.

Gargoyle Arctic Oil C is a high quality pure mineral oil of light body which remains fluid at a very low temperature, and is therefore adapted to low temperature conditions where continuous and economical methods of application are employed.

This oil is recommended for the air motors or cylinders of compressed air driven machines, where low temperatures are encountered due to air expansion or weather conditions. It is also recommended for the ring oiled bearings of electric motors exposed to cold weather.

Gargoyle D.T.E. Oil Light is a pure mineral oil of exceptionally high quality, and specially adapted to use in circulation lubrication systems operating at normal temperatures, to which its light body is suited.

Due to the purity and chemical stability of this oil, it separates readily from impurities and maintains its high qualities during long periods of use.

This oil is recommended for the circulation system of lubrication, as applied to reciprocating steam engines, ventilating fan engines, and direct connected steam turbines and turbo generators.

Gargoyle D.T.E. Oil Heavy Medium is a pure mineral oil of the same general characteristics as Gargoyle D.T.E. Oil Light but possessing the heavier body necessary for use at higher temperatures, or where a cushioning effect is required for gear lubrication. Being a very stable oil, free from the components that would tend to cause carbon formation at high temperature, this oil is specially adapted to the lubrication of air compressor cylinders.

This oil is recommended for the complete lubrication of air compressors and air regenerative hoists, and for circulation and ring lubrication of geared turbines.

Gargoyle Crank Case Oil is a heavy bodied oil of cylinder stock adapted to the splash lubrication of internal machine parts where water may be present and to the lubrication of heavily loaded or heated bearings or gears.

This oil is recommended for the complete lubrication of splash oiled steam engines of closed crank case type, and the enclosed worm gears and hand oiled bearings of mechanical stokers. This oil is also recommended for the hand or splash lubrication of silent chains.

Gargoyle Product 8855 is an exceedingly adhesive residual mineral oil, semi-fluid at ordinary temperatures.

This product is recommended for the lubrication of open gears and for the protection of wire cables. The tenacity of this lubricant produces a most effective cushion for gear teeth even under the most severe conditions, most smoothly applied when hot.

As a protective coating for wire cables it may be made to penetrate by heating. When cold it recovers its strong adhesive characteristics essential to this service.

Gargoyle Valve Oil is a medium bodied compounded cylinder oil especially adapted to the wet steam conditions encountered in steam cylinders throughout the colliery. This oil is readily atomized and distributed over the cylinder surface, to which it adheres strongly in spite of the presence of moisture.

This cylinder oil is recommended for the lubrication of all steam cylinders throughout the colliery except those in the main power plant, where the use of dry or superheated steam may call for a heavier bodied oil.

Gargoyle Cylinder Oil 600W is a high grade compounded steam cylinder oil of heavy body adapted to the high pressure, high temperature steam frequently employed in engines located near the steam boilers.

This cylinder oil is recommended for the lubrication of steam cylinders of engines using steam at pressures of 100 pounds or more, dry or superheated to a temperature not exceeding 600° F.

Gargoyle Cylinder Oil Rarus is a strongly compounded steam cylinder oil of high quality which, due to its light body, is readily atomized in steam engines operating on low pressure steam.

This cylinder oil is recommended for the lubrication of the low pressure cylinders of cross compound engines.

Voco Mine Car Grease Medium is a slightly fluid grease specially manufactured for the lubrication of mine car wheels. This grease is sufficiently fluid at low temperatures for effective use during winter months and still retains sufficient consistency during summer months to enable it to stay in place and render long continued service in a broad variety of mine car wheels.

This grease is recommended for plain cavity type wheels of mine cars, conveyors, etc., for grease packed roller and ball bearings of car wheels and journal boxes, and for grease packed ball bearings of electric motors. It is also recommended for the lubrication of the cutter chain of coal cutting machines.

Voco Cup Grease No. 3 is a high quality cup grease of medium consistency adapted to a broad variety of purposes in the colliery where a cup grease is required.

This grease is recommended wherever compression grease cups are employed on plain bearings, and on bearings of locomotives, coal loaders and power shovels intended to be grease packed. It is also recommended for the rotating devices of pneumatic and electric and for slushing the worm drive gears on some types of coal cutters.

Voco Plunger Pole Grease is a medium consistency grease of high lubricating quality possessing the power of strong adhesion to wet surfaces.

This grease is recommended for the lubrication of the plungers of outside packed pumps to which it is applied by paddle or swab.

Selection of Lubricants: Each individual mine requires certain lubricants, selected from the foregoing list. It is seldom that all of these lubricants are required in a single mine, the average mine requiring the use of two general service oils, two special service oils, one steam cylinder oil, one gear lubricant, one car grease and one cup grease.

Selection of the correct lubricant for each condition is of great importance, requiring care and judgment, and can be made best by engineers who have studied and practiced lubricating in many mines. The engineers of the Vacuum Oil Company are so qualified, and are placed at the disposal of customers.

Application of Lubricants: Next in importance to the selection of correct lubricants is their application by methods that will assure reliability of lubrication and economy in consumption.

The assistance of the engineers of the Vacuum Oil Company is freely offered also for systematizing the handling and application of the various lubricants. Those who take full advantage of this service cannot fail to profit through improved reliability and economy of operation.

VACUUM OIL COMPANY PUBLICATIONS

The following publications of the Vacuum Oil Company deal with problems of lubrication in the colliery. Any of these will be forwarded on request.

Coal Mine Lubrication.
Bearings and their Lubrication.
Grooving of Horizontal Radial Bearings.
Bottle Oilers.
Wick Feed Oilers.
Ball and Roller Bearings.
Stationary Steam Engines.
Atomizers and Methods of Installation.
The Horizontal Steam Turbine.
Air Compressors.
Rock Drills.
Steam Shovels.
Conveyors.
Wire Rope and Cable Lubrication.
Machine Shop Lubrication.

VEEDOL

The Story of a Famous Test.

Veedol is not merely an ordinary oil made better. It is chemically different from other lubricants, and is made by the Faulkner process, a method exclusively developed and practiced in the Tide Water refinery.

By this process, Veedol is made to resist the intense heat to which it is subjected in the engine. This heat, ranging from 200 degrees to 1,000 degrees, quickly breaks down ordinary oil, and causes it to deposit a black sediment. Thus ordinary oil deteriorates quickly, loses its lubricating value, and besides requiring frequent replacement, causes friction and wear in the engine, as well as considerable loss of power.

Lubricants.

Veedol Zero-Light, as the name implies, flows readily at zero and lubricates in the coldest weather. It possesses all of the superior lubricating properties of other Veedol paraffin base lubricants having higher chill points. Its quality, therefore, is not sacrificed for the sake of low cold test. For use in all types of water-cooled engines and in all types of lubricating systems.

Veedol medium possesses superior lubricating qualities when exposed to heat and flows readily in cold weather. It may be used in all types of water-cooled internal combustion engines and in all types of lubricating systems.

Veedol heavy has superior heat-resisting qualities and is particularly suitable for use in water-cooled engines which operate at high temperatures.

Veedol extra heavy is manufactured especially for use in air-cooled motorcycle engines and also for water-cooled engines which operate at high temperatures, such as the Knight sleeve valve and some heavy duty engines.

Special Lubricants.

Veedol kerosene engine oil is especially manufactured for the lubrication of all types of kerosene or heavy oil burning explosive engines, where water is injected into the cylinders or used with the fuel, causing moist cylinder conditions.

Veedol steam cylinder is a straight mineral oil of extra heavy body suitable for the lubrication of steam automobiles, such as the Stanley, White, Doble, etc.

Veedol trans-gear is a dark semi-fluid oil especially suitable for the most efficient lubrication of differential and transmission mechanisms where the housings are sufficiently tight to retain it. Also for use in worm drive rear axles of both commercial and pleasure vehicles.

Greases.

Veedol gear compound is manufactured by a special process. It retains practically the same consistency throughout the full range of operating temperatures and adheres to such a degree to rotating parts as to assure their efficient lubrication. The leakage of this lubricant by way of joints in the mechanisms, is less than that of any other.

Veedol cup grease is offered in three grades: Light, medium and heavy. All grades are guaranteed to contain only the highest quality of lubricating oil and are recommended for use in grease cups, universal joints, etc.

Veedol graphite grease may also be obtained in three grades: Light, medium and heavy, and is recommended for the lubrication of water pump shafts and also to those who prefer a grease compounded with graphite for differential and transmission lubrication.

JANNEY, SEMPLE, HILL & CO.

2868

VEEDOL FORDOL

YOUR MARKET FOR VEEDOL FORDOL IS 54 PER CENT OF THE AUTOMOBILES IN YOUR TERRITORY

Here are just a few of many talking points which warrant quick turnovers.

Of course the Ford chattered when it came to a stop, before Ford owners learned the wonder workings of Veedol Fordol, and so would any car if it required a special oil and didn't get it.

Of course the Ford automobile would not coast down slight grades before Veedol Fordol was known—and neither would any car if it required a special oil and didn't get it.

Brake and transmission bands are costly things to replace in a Ford car—and they'd wear out twice as fast in any car if they required a special oil and didn't get it.

Now then here's the point, faulty lubricants are the cause of these annoyances—the right oil overcomes them all—and four years experimenting have proved that Veedol Fordol is the right oil.

Veedol Fordol is refined especially for the Ford automobile—Veedol Fordol eliminates chatter, permits the Ford to coast down slighest grades, reduces gasoline consumption at least 10%, saves wear and tear on brake bands, transmission bands and tires, reduces carbon—but that's not all—

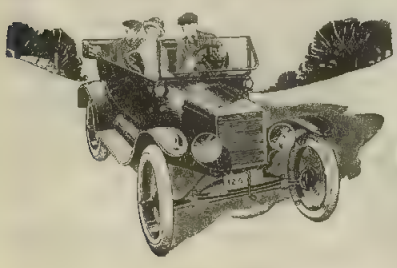
It took four years to make these talking points possible—it will pay to learn them word for word.

1—10 to 25% saving in gasoline—Hundreds of tests have repeatedly demonstrated that Fordol conservatively saves 10% on the gasoline consumption of a Ford car Savings of from 25% to 33⅓% have been developed in a number of tests.

2—Eliminates costly "chatter"—Fordol lengthens the life of Ford brake and transmission bands by properly lubricating them. So called "chatter," a result of faulty lubricants, is entirely eliminated with Fordol.

3—10 to 25% saving in oil—Tide Water engineers have definitely established savings in oil consumption of from 10% to 25%. The exact savings depend upon the mechanical condition of the engine and the lubricant formerly used.

4—10 to 25% less carbon—Fordol forms on an average from 10% to 25% less carbon in the Ford engine cylinders. The exact savings depend on the mechanical condition of the engine and the lubricant formerly used Less carbon means more power with fewer repairs.



5—Resists heat and friction—Fordol possesses to a super-degree the famous characteristic of all Veedol oils to resist heat and friction. Thermometer readings prove that it definitely reduces engine temperatures even under extreme operating conditions

6—Increased ability to coast—With average lubrication a Ford will not only coast down steep hills because of internal friction in the transmission. With Fordol coasting is possible down the slightest grades.

7—Resists fuel dilution—Even with poor fuel, Tide Water engineers have proven that Fordol maintains its power seal and lubricating value longer than other oils. This means better combustion, more miles per gallon of gas and per quart of Fordol.

8—Fewer repairs—Because Fordol completely masters the lubricating problems of the Ford Power plant, it reduces to a minimum the wear and tear on the motor and transmission. The result is a hitherto unknown freedom from engine vibration and repair bills in the operation of this popular car.

Prices of Veedol Fordol.

Size container	Drums	½ Drums	¼ Drums
Gallons in container.....	55	30	15
Per gallon	$1.06	$1.11	$1 21

Size container	5 Gal. Can	1 Gal.Can
Per gallon	$1.21	$1.41

Note—Drums and cans not returnable.

JANNEY, SEMPLE, HILL & CO.

VEEDOL

2866A

AUTOMOBILE OIL CHART

KEY NUMBERS

KEY NUMBERS 1, 2, 3, 4, 5, and 6 indicate the correct grades of VEEDOL for automobiles and trucks for summer or winter:

VEEDOL No. 1 (Light Zero) A light, low cold test oil. Especially prepared for easy starting in cold weather.

VEEDOL No. 2 (Medium) A medium oil. Also suitable for cold weather.

VEEDOL No. 3 (Heavy) A heavy medium-bodied oil.

VEEDOL No. 4 (Special Heavy) A heavy oil for Knight engines, tractors and heavy duty trucks.

VEEDOL No. 5 (Extra Heavy) A very heavy oil for motorcycles and high power tractors.

VEEDOL No. 6 (Steam Cylinder) A heavy oil for engines using superheated steam.

VEEDOL is distinguished by its staying power. It holds its body under the high operating temperatures within the engine.

VEEDOL RESISTS HEAT

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
A & B Trucks	..	..	..	..	2	1	2	1
Abbott 6-Cyl.	..	..	..	..	2	1	2	1
Abbott 8-Cyl.	..	..	..	..	..	..	2	2
Acason Trucks	3	1	3	1	3	1	3	1
Ace	2	2	..	..	..	..	..	..
Ace Trucks	3	1	3	1	3	1	3	1
Acme Trucks	3	1	3	1	3	1	3	1
Adams Trucks	3	1	3	1	3	1	3	1
Aetna Trucks	3	2	3	2	3	2	..	..
Ahrens Fox Trucks	4	3	4	3	..	..	..	..
Akron Multi Truck	3	1	3	1	..	..	..	..
Alco	..	..	..	..	..	..	3	2
Alco Trucks	..	..	..	..	..	..	3	1
Allen	2	1	2	1	2	1	2	1
Alter	2	1	2	1	2	1	2	1
Ambassador	2	1	2	1	..	..	..	..
American La France (Fire Engine)	4	4	4	4	4	4	4	4
American Trucks	3	1	3	1	3	1	3	1
American Six	2	1	2	1	2	1	2	1
Ams-Sterling Trucks	2	1	2	1	2	1	2	1
Anderson	2	1	2	1	2	1	2	1
Apex Trucks	3	1	3	1	3	1	..	..
Apex	..	..	2	1	2	1	2	1
Apperson 6-Cyl	..	..	..	..	..	2	1	..
Apperson (other models)	3	2	3	2	3	2	3	2
Arbens Trucks	..	..	..	..	..	..	3	1
Argo	..	..	..	..	..	..	2	1
Argonne	..	..	..	..	2	1	..	..
Armleder Trucks	3	1	3	1	3	1	3	2
Armstrong Sidelay	2	1	2	1	2	1	3	1
Atco	3	2	3	2	3	2	..	..
Atlas Knight	4	4	4	4	4	4	4	4
Atlas Trucks	3	1	3	1	3	1	3	1
Attebury Trucks	3	1	3	1	3	1	3	1
Auburn	2	1	2	1	2	1	2	1
Austin 12- Cyl.	3	2	3	2	3	2	..	..
Autocar 1½ & 2 Ton	3	2	3	2	3	2	3	2
Autocar (other models)	3	1	3	1	3	1	..	..
Autohorse	3	1	3	1	3	1	..	..
Available Trucks	3	1	3	1	3	1	3	1
Avery	2	1	2	1	2	1	2	1
Avery Trucks	3	1	3	1	3	1	3	1
Barker Trucks	3	2	3	2	3	2	3	2
Bartholomew Trucks	3	1	3	1	3	1	3	1
Beck Trucks	3	1	3	1	3	1	3	1
Beech Creek Trucks	3	1	3	1	3	1	3	1
Beggs	3	1	3	1	..	..	..	..
Bell	..	..	..	..	..	..	3	1
Belmont 1-Ton	3	1	3	1	3	1	..	..
Belmont 2 & 3½-Ton	3	2	3	2	3	2	..	..
Ben Hur	..	..	..	..	..	..	2	1
Benz	2	1	2	1	2	1	2	1
Berliet	..	..	..	..	..	..	2	1
Bessemer Trucks	3	1	3	1	3	1	3	1

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Bethlehem Trucks	3	1	3	1	3	1	3	1
Biddle	..	..	..	..	..	..	2	1
Bimel	..	..	..	..	..	..	2	1
Birch	3	3	3	3	3	3	3	3
Bisar 4 & 5-Ton	3	1	3	1	3	1	3	1
Bour Davis	2	1	2	1	2	1	2	1
Bourne Mantic Truck	..	..	..	..	..	..	3	1
Brennan	..	..	..	..	..	..	2	1
Brewster	4	4	4	4	4	4	4	4
Brinton Trucks	3	1	3	1	3	1	3	1
Briscoe 4-Cyl.	2	1	2	1	2	1	2	1
Briscoe 8-Cyl.	..	..	..	..	..	..	3	2
Briscoe Trucks	3	1	3	1	3	1	3	1
Brockway 5-Ton	3	2	3	2	3	2	3	2
Brockway (other models)	3	1	3	1	3	1	3	1
Buick	2	1	2	1	2	1	2	1
Bush	2	1	2	1	2	1	2	1
Cadillac	2	1	2	1	2	1	2	1
Capital Trucks	3	2	3	2	3	2	..	..
Car Nation	..	..	..	..	..	..	3	1
Case	2	1	2	1	2	1	2	1
Chalmers	2	1	2	1	2	1	2	1
Champion	3	1	3	1	..	..	..	..
Champion Light Comcl.	3	1	3	1	..	..	..	..
Chandler	2	1	2	1	2	1	2	1
Charter Oak	..	..	..	..	..	..	2	1
Chase Trucks	3	1	3	1	3	1	3	1
Chelsea	..	..	..	..	..	..	2	1
Chester ¾-Ton	3	..	3	2	3	2	3	2
Chester (other models)	3	1	3	1	3	1	3	1
Chevrolet 4-Cyl.	2	1	2	1	2	1	2	1
Chevrolet 6-Cyl.	..	..	..	..	..	..	2	2
Chevrolet Trucks	3	1	3	1	3	1	3	1
Chicago	..	..	..	..	2	1	2	1
Chicago Trucks	3	2	3	2	3	2	..	..
Cleveland	2	1	2	1	2	1	2	1
Climber Truck	3	1	3	1	..	..	..	..
Clydesdale Truck	3	1	3	1	3	1	3	1
Coey	..	..	..	..	..	..	2	1
Colby	..	..	..	..	..	..	2	1
Cole 4-Cyl.	..	..	..	..	..	..	2	1
Cole 8-Cyl.	3	2	3	2	3	2	3	2
Collier Trucks	..	..	..	..	..	..	3	2
Colonial	..	..	..	..	..	..	2	1
Columbia 6-Cyl.	2	1	2	1	2	1	2	1
Columbia Trucks	3	2	3	2	3	2	3	2
Comer Trucks	..	..	..	..	..	..	3	1
Comet 6-Cyl	2	1	2	1	2	1	..	..
Comet Trucks	3	1	3	1	..	..	..	..
Commerce Trucks	..	..	..	..	..	..	3	1
Commonwealth Trucks	2	1	2	1	2	1	..	..
Concord Trucks	3	1	3	1	3	1	3	1
Cook Trucks	3	2	3	2	..	..	..	..
Corbin	..	..	..	..	..	..	2	1
Corbitt Trucks	3	1	3	1	3	1	3	1
Corliss Trucks	3	1	3	1	3	1	3	1
Couple Gear Trucks	3	2	3	2	3	2	3	2
Crane Simplex	3	2	3	2	3	2	3	2
Croce Trucks	..	..	..	..	..	..	3	2
Crawford	2	1	2	1	2	1	2	1
Crow-Elkhart	3	1	3	2	3	2	3	1
Crown	..	..	..	..	..	..	3	2
Cunningham 6-Cyl	..	..	..	..	..	..	2	1
Cunningham 8-Cyl.	3	2	3	2	3	2	3	2
Daimler Knight	4	4	4	4	4	4	4	4
Daniels 8-Cyl.	3	2	3	2	3	2	2	1
Darracq	2	1	2	1	2	1	2	1
Dart Trucks	3	1	3	1	3	1	3	1
Davis	2	1	2	1	2	1	2	1
Day-Elder Trucks	3	1	3	1	3	1	3	1
Dayton Trucks	3	2	3	2	3	2	3	2
Dearborn Trucks	3	1	3	1	3	1	..	..
De Dion	4	3	4	3	4	3	4	3
Defiance Trucks	3	1	3	1	3	1	..	..
De Kalb Trucks	3	1	3	1	3	1	3	1
Delahaye	3	2	3	2	3	2	3	2
Delauney Belleville	3	2	3	2	3	2	3	2
Denby Trucks	3	1	3	1	3	1	3	1

AUTOMOBILE OIL CHART

Continued From Preceding Page.

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Dependable Trucks	3	2	3	2	3	2	..	..
De Tamble	..	..	..	..	..	..	2	1
Detroiter	..	..	..	..	..	..	3	1
Diamond T. Trucks	3	1	3	1	3	1	3	1
Dile	2	1	2	1	2	1	2	1
Dispatch Trucks	..	..	..	..	..	..	3	2
Dixie Flyer	2	1	2	1	..	..	2	1
Dixie Flyer	..	..	..	..	..	..	2	1
Doane Trucks	..	..	..	..	..	..	3	1
Doble Steamer	6	6	6	6	6	6	6	6
Dodge	2	1	2	1	2	1	2	1
Dodge Truck	3	1	3	1	3	1	3	1
Dorris 6-Cyl.	3	2	3	2	3	2	..	..
Dorris Trucks	2	1	2	1	2	1	2	1
Dort	2	1	2	1	2	1	2	1
Dort Truck	3	1	3	1	3	1	..	..
Double Drive Trucks	3	2	3	2	3	2	..	..
Douglas Trucks	3	2	3	2	3	2	..	..
Downing Trucks	..	..	..	..	..	..	3	1
Drexel	..	..	..	..	..	..	2	1
Driggs	2	1	2	1	2	1	..	..
Drummond 8-Cyl.	..	..	..	..	..	..	2	1
Dudley	..	..	..	..	..	..	2	1
Duesenberg-8	4	4	4	4	..	..	..	..
Dunn	..	..	..	..	..	..	2	1
Du Pont	3	2	3	2	..	..	..	..
Duplex Trucks	3	1	3	1	3	1	3	1
Durant	2	1	2	1	..	..	..	..
Durable Dayton Trucks	..	..	..	..	..	..	3	2
Duryea	..	..	..	..	6	6	5	5
Duty Trucks	3	1	3	1	..	..	..	..
Eagle	..	..	..	..	..	..	2	1
Eagle Trucks	3	2	3	2	3	2	..	..
Earl	2	1	2	1	..	..	..	..
Economy 6-Cyl.	..	..	..	..	..	..	2	1
Economy 8-Cyl.	..	..	..	..	..	..	3	2
Elbert	..	..	..	..	..	..	2	1
Elcar 8-Cyl.	2	1	2	1	2	1	2	1
Elgin 6-Cyl.	4	3	4	3	2	1	2	1
Ellsworth Trucks	3	1	3	1	3	1	3	1
Empire	..	..	..	..	..	..	2	1
Enger	..	..	..	..	..	..	3	1
Erie Trucks	3	1	3	1	3	1	3	1
Essex	2	1	2	1	2	1	2	1
Everitt	..	..	..	..	..	..	2	1
Fageol	3	2	3	2	3	2	3	2
Fageol Trucks	3	2	3	2	3	2	3	2
Falcon	3	1	3	1	..	..	..	..
Fargo Trucks	3	1	3	1	3	1	3	1
Farmack	2	1	2	1	2	1	2	1
Federal Trucks	3	2	3	2	3	2	3	2
Fergus	4	4	4	4	4	4	..	..
Ferris	2	1	2	1	2	1	..	..
Fint	3	2	3	2	3	2	3	2
Flagler	..	..	..	..	2	1	2	1
Ford	2	1	2	1	2	1	2	1
Ford 1-Ton	3	1	3	1	3	1	3	1
Forsaler Trucks	3	1	3	1	3	1	3	1
Fox Air Cooled	3	2	3	2	..	..	..	..
Franklin	3	3	3	3	3	3	3	3
Frontmobile	..	..	..	..	..	..	2	1
F. B. F. Trucks	2	1	2	1	2	1	2	1
F. W. D. Trucks	3	2	3	2	3	2	3	2
Fulton Trucks	3	1	3	1	3	1	3	1
G. A. Schact Tks	3	1	3	1	3	1	3	1
Gabriel Trucks	..	..	..	..	..	..	2	1
Gadabout	..	..	..	..	2	1	2	1
Gaggenesu Trucks	..	..	..	..	3	1	3	1
Gardner	2	1	2	1	..	..	..	..
Garford Trucks	3	1	3	1	3	1	3	1
Gary Trucks	3	1	3	1	3	1	3	1
Gearless Steamer	6	6	..	..	..	..	..	..
Gem Trucks	..	..	..	..	..	..	3	1
Geneva Trucks	3	2	3	2	3	2	3	2
Geronimo 6-Cyl.	..	..	..	..	2	1	2	1
Geraix Trucks	..	..	..	..	..	..	3	1
Gheat	..	..	..	..	..	..	3	1

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
G. & J. Trucks	3	2	3	2	3	2	..	..
Glenwood	3	2	..	..	..	..	..	..
Glide	..	..	..	..	2	1	2	1
Globe Trucks	..	..	..	..	..	..	3	1
G. M. C. Trucks	3	1	3	1	3	1	3	1
Goffredson Trucks	3	2	3	2	3	2	..	..
Goodspeed	3	2	3	2	..	..	..	..
Graham Bros. Trucks	3	1	3	1	..	..	..	..
Gramm Berstein Trucks	3	1	3	1	3	1	3	1
Grant	2	1	2	1	2	1	2	1
Grant Trucks	3	1	3	1	3	1	3	1
Gray	2	1	..	..	..	..	..	..
Great Eagle	3	3	3	2	3	3	3	2
Great Western	2	1	2	1	2	1	2	1
Greyhound	2	1	2	1	2	1	2	1
G. W. W. Truck	3	2	3	2	..	..	..	..
Hackett	..	..	..	..	..	..	2	1
Hahn Trucks	3	1	3	1	3	1	3	1
Hal 12-Cyl.	..	..	..	..	..	..	3	2
Hal-Fur Trucks	3	2	3	2	3	2	3	2
Hall Trucks	..	..	..	..	3	1	3	1
Halladay	..	..	..	..	2	1	2	1
Handley Knight	4	4	4	4	4	4	4	4
Hanson 6-Cyl.	2	1	2	1	2	1	..	..
Harroun	..	..	..	..	2	1	..	..
Harvard	2	1	2	1	2	1	2	1
Harvey Trucks	3	1	3	1	3	1	3	1
Hassler	2	1	2	1	2	1	2	1
Hatfield	2	1	2	1	2	1	2	1
Hatfield Trucks	3	1	3	1	3	1	3	1
Havers	3	1	3	1	3	1	3	1
Hawkeye Trucks	3	1	3	1	3	1	3	1
Haynes 12-Cyl.	3	2	3	2	3	2	3	2
Haynes (other models)	2	1	2	1	2	1	2	1
Hazelton	..	..	..	..	..	..	2	1
H. C. S.	3	1	3	1	3	1	..	..
Henderson	..	..	..	..	..	..	2	1
Hendersen Trucks	..	..	..	..	..	..	3	1
Hendrickson Trucks	3	1	3	1	3	1	3	1
Hercules Trucks	3	1	3	1	3	1	3	1
Herff Brook	..	..	..	..	..	..	2	1
Higrade Trucks	..	..	..	..	..	..	3	1
Hollier	..	..	..	..	2	1	2	1
Holly	..	..	..	..	..	..	2	1
Homer-Laughlin	..	..	..	..	..	..	2	1
Holmes 6-Cyl.	3	2	3	2	3	2	3	2
Hoover Trucks	..	..	..	..	..	..	3	1
Horner Trucks	..	..	..	..	3	1	3	1
Houghton Trucks	..	..	..	..	..	..	3	1
Hudson Super Six	2	1	2	1	2	1	2	1
Huffman	3	1	3	1	3	1	3	1
Huffman Trucks	3	1	3	1	3	1	3	1
Hupmobile	2	1	2	1	2	1	2	1
Hurlburt 1½ to 5-Ton	3	1	3	1	3	1	3	1
Hurlburt 7½-Ton	4	3	4	3	4	3	4	3
I. H. C. 2-Cyl. Trucks	..	..	..	..	..	..	3	2
I. H. C. 4-Cyl. Trucks	3	2	3	1	3	1	3	1
Independent Trucks	3	1	3	1	3	1	3	1
Indiana Trucks	3	1	3	1	3	1	3	1
Isotta-Fraschini	2	1	2	1	2	1	2	1
Itala	4	4	4	4	..	..	..	..
Interstate	..	..	..	..	..	..	3	1
Jackson 6-Cyl.	3	1	3	1	3	1	3	1
Jackson 8-Cyl.	..	..	..	..	3	2	3	2
Jackson F. W. D.	3	1	3	1	3	1	..	..
Jeffery	..	..	..	..	..	..	2	1
Jeffery Trucks	..	..	..	..	..	..	3	1
Jumbo Trucks	3	2	3	2	3	2	..	..
Jones	..	..	..	..	2	1	2	1
Jordon	2	1	2	1	2	1	2	1
Kalamazoo Trucks	3	1	3	1	3	1	..	..
Kearns Trucks	3	1	3	1	3	1	3	1
Keeton	3	2	3	2	3	2	3	2
Kelley-Springfield Trucks	3	2	3	2	3	2	3	2
Kelsey	2	1	..	..	..	..	..	..
Kent	..	..	..	..	..	..	2	1
Kenworthy	3	2	3	2	..	..	..	..

AUTOMOBILE OIL CHART

Continued from Preceding Page.

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Keystone Trucks	3	3	3	2	3	3	3	2
Kimball Trucks	3	3	3	2	3	2	...	...
King	2	1	2	1	2	1	2	1
Kintz	3	1	...	...	...	...	...	...
Kissel 8 Cy.	4	6	4	4	4	4	4	6
Kissel 12-Cyl.	...	...	...	...	...	...	3	2
Kissel 1½-Ton	3	1	3	1	3	1	3	1
Kissel 3½-Ton	3	2	3	2	3	2	3	2
Kleiber Trucks	...	1	3	1	3	1	1	1
Kleiman Trucks	3	2	3	2	3	2	...	...
Kline Kar 6-Cyl	3	2	3	2	3	2	3	2
Knickerbocker	...	...	...	...	...	...	3	1
Knox	...	...	...	...	...	...	3	2
Knox Trucks	3	2	3	2	3	2	3	2
Koehler Trucks	3	2	3	2	3	2	3	1
Koenig & Luhrs Trucks	...	...	...	...	...	...	3	1
Krebs Trucks	...	...	...	...	...	...	1	1
Krit	...	...	...	...	...	...	2	1
K Z Truck	3	1	3	1	...	...	...	...
Lafayette 8-Cyl.	3	2	3	2	3	2	...	...
Lambert	...	...	...	...	...	...	2	1
Lamson Trucks	...	...	...	...	...	...	3	2
Lancia	3	2	3	2	3	2	3	2
Lane Trucks	...	...	...	...	...	...	3	1
Lange Trucks	3	1	3	1	3	1	3	1
Lapeer Trucks	...	...	...	...	3	1	3	1
Larrabee Trucks	3	...	3	1	3	1	3	1
Laughlin 8 Cyl	...	...	...	...	...	...	3	1
Laurel	...	...	...	...	...	...	2	1
Lauth Jurgens	...	...	...	...	...	...	...	...
Lawson Trucks	3	2	3	2	3	2	...	...
Leach	4	4	4	4	...	...	...	...
Lenox	2	1	2	1	2	1	2	1
Lescina	...	1	3	1	2	1	2	1
Leslie Trucks	3	1	3	1	3	1	3	1
Lewis Vi	...	...	...	...	...	...	2	1
Lexington "B"	3	1	3	1	3	1	3	1
Lexington "F"	3	2	3	2	...	...	...	...
Liberty	2	1	2	1	2	2	2	1
Lincoln	2	1	2	...	2	1	...	...
Lippard-Stewart Trucks	3	1	3	1	3	1	3	1
Little Giant Trucks	3	1	3	1	3	1	3	1
Locomobile	2	1	2	...	2	2	2	1
Locomobile Trucks	3	2	3	2	3	2	3	2
Lombard Trucks	3	2	3	2	3	2	3	2
Lorraine	3	1	3	1	3	1	3	1
Lozier	...	...	...	...	...	...	2	1
Loyal Trucks	3	1	3	1	3	1	3	1
Luedinghaus Truck	3	2	3	1	3	1	...	...
Luverne	2	1	2	1	2	1	2	1
Lyons-Knight	4	4	4	4	4	4	4	4
Macear Trucks	3	2	3	2	3	2	3	2
Mac Donald Trucks	3	2	3	2	3	2	...	...
Mack Model A, B & A, C Trucks	3	1	3	...	3	1	3	1
Mack Model 8 Trucks	...	...	...	...	...	...	3	2
Madison	...	...	...	...	...	...	3	2
Maibohm	2	1	2	1	2	1	2	1
Main Trucks	3	1	3	...	3	...	3	1
Majestic 8-Cyl.	...	...	...	...	...	...	2	1
Mapleleaf	3	2	3	2	3	2	2	2
Marathon	...	...	...	...	...	...	2	1
Marion	...	...	...	...	...	...	2	1
Marion Batteles	...	...	...	...	...	...	2	1
Marmon	1	2	3	2	3	2	3	2
Marquette	...	...	...	...	...	...	2	1
Marsh	2	1	2	1	...	...	...	...
Marshall Arter	1	2	2	2	2	2	2	2
Martin Car	6	6	...	...	...	...	...	...
Martin Trucks	3	1	3	1	3	1	3	1
Mason	...	...	...	...	...	...	2	1
Master 2 & 3½-Ton	4	3	4	3	4	3	4	3
Master Junior Trucks	3	1	3	1	3	1	3	1
Matheson	...	...	...	...	...	...	2	1
Maxim Trucks	3	1	3	1	3	1	3	1
Maxwell	2	1	2	1	2	1	2	1
Maxwell Trucks	3	1	3	1	3	1	3	1
McFarlan	2	1	2	...	2	1	2	1

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
McIntyre	...	...	...	...	...	...	2	1
McLaughlin 6-Cyl	2	1	2	1	2	1	2	1
Menominee Trucks	3	1	3	1	3	1	3	1
Mercer	3	2	3	2	3	2	3	2
Mercedes	3	2	3	2	3	2	3	2
Mercedes Truck	3	2	3	2	3	2	3	2
Mercury	...	...	...	...	...	...	2	1
Merit	2	1	2	1	2	1	...	...
Metallurgique	3	2	3	2	3	2	3	2
Meteor	2	1	2	1	2	1	2	1
Metropol	...	...	...	...	...	...	2	1
Metz	2	1	2	1	2	1	2	1
Michigan	...	...	...	...	...	...	2	1
Midland	...	...	...	...	...	...	2	1
Minerva Knight	4	4	4	4	4	4	4	4
Mitchell 6-Cyl.	2	1	2	1	2	1	2	1
Mitchell 8-Cyl.	...	...	...	...	3	2	3	2
Modern Truck	3	1	3	1	3	1	3	1
Moeller Truck	3	1	3	1	3	1	3	1
Mogul Truck	3	1	3	1	3	1	3	1
Moline Knight	4	4	4	4	4	4	4	4
Monarch 8-Cyl.	...	...	...	...	...	...	2	1
Monarch Trucks	...	...	...	...	...	...	3	2
Monitor	2	1	2	1	2	1	2	1
Monroe	2	...	2	1	2	1	2	1
Moon	2	1	2	1	2	1	2	1
Moon Truck	3	1	3	1	3	1	3	1
Moore	3	1	3	1	3	1	3	1
Moreland Trucks	3	1	3	1	3	1	3	1
Morgan Trucks	...	...	...	...	...	...	3	1
Morton Trucks	3	1	3	1	3	1	3	1
Motokart	...	...	...	...	...	...	2	1
Mover	3	2	3	2	3	2	3	2
Mueller Trucks	3	1	3	1	3	1	3	1
Murray 8-Cyl.	...	...	...	...	...	...	2	1
Muskegon Trucks	3	1	3	1	3	1	3	1
Napier	3	2	3	2	3	2	3	2
Napoleon Trucks	2	1	2	1	2	1	2	1
Nash	3	1	3	1	2	1	2	1
Nash Trucks	3	1	3	1	3	1	3	1
Nateo Trucks	3	2	3	2	3	2	3	2
National 12-Cyl.	...	...	...	...	4	3	4	3
National (other models)	2	1	2	1	2	1	2	1
Nelson	3	2	3	2	3	2	3	2
Nelson & Le Moon 5-Ton	3	2	3	2	3	2	3	2
Nelson & Le Moon (other models)	3	1	3	1	3	1	3	1
Netco Trucks	3	1	3	1	3	1	3	1
New Era	...	...	...	...	...	...	2	1
New York Trucks	3	1	3	1	3	1	3	1
Niagara Trucks	...	...	...	...	...	...	3	1
Niles Trucks	3	1	3	1	3	1	3	1
Noble Trucks	3	1	3	1	3	1	...	...
Noma	2	1	2	1	2	1	2	1
Norwalk	2	1	2	1	2	1	3	1
Northwestern Trucks	3	1	3	1	3	1	...	...
Norwalk Trucks	...	...	...	...	3	1	3	1
Nuseo Trucks	...	...	...	...	3	2	3	2
Nyberg	...	...	...	...	...	...	...	1
Oakland 4 & 6-Cyl.	3	1	3	1	3	1	3	1
Oakland 8-Cyl.	...	...	...	...	...	...	3	1
Ogden Trucks	3	1	3	1	...	...	...	...
Ogren	2	1	2	1	2	1	2	1
Old Hickory Trucks	3	1	3	1	3	1	3	1
Old Reliable Trucks	3	2	3	2	3	2	3	2
Oldsmobile 4 & 6-Cyl.	3	1	3	1	3	1	3	1
Oldsmobile 8-Cyl.	4	4	4	4	4	4	4	4
Oldsmobile ¾-Ton	4	4	4	4	4	4	4	4
Olympian	...	...	...	...	2	2	2	1
Olympic Trucks	3	1	3	1	3	1	...	...
Omaha Trucks	3	1	3	1	3	1	3	1
Oshkosh Trucks	3	1	3	1	3	1	3	1
Otto	...	...	...	...	...	...	2	1
Overland	2	1	2	1	2	1	2	1
Overland Knight	4	4	4	4	4	4	4	4
Owen Magnetic	...	...	2	1	2	1	2	1
Packard	3	2	3	2	3	2	3	2
Packard Trucks	3	2	3	2	3	2	3	2

JANNEY, SEMPLE, HILL & CO.

VEEDOL

AUTOMOBILE OIL CHART

Continued from Preceding Page.

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Packet Trucks	3	1	3	1	..	..	..	..
Paige	2	1	2	1	2	1	2	1
Paige Trucks	3	1	3	1	3	1	..	..
Pan	3	1	3	1	3	1	..	..
Pan American	3	1	2	1	2	1	2	1
Palmer Trucks	..	..	..	..	..	..	6	1
Palmer Moore	..	..	..	..	..	..	2	1
Palmer Singer	..	..	..	..	..	..	2	1
Panhard Trucks	3	1	3	1	3	1	3	1
Panhard-Levassor	4	4	4	4	4	4	4	4
Paragon Trucks	3	1	3	1	3	1	3	1
Parenti	2	1	3	1	2	1	..	..
Parker Trucks	3	1	3	1	3	1	3	1
Partin-Palmer	..	..	..	..	..	..	2	1
Paterson	2	1	2	1	2	1	2	1
Pathfinder 12-Cyl.	..	..	..	..	2	1	2	1
Peerless 6-Cyl.	..	..	..	..	..	..	2	1
Peerless 8-Cyl.	4	4	4	4	4	4	4	4
Peerless Trucks	3	1	3	1	3	1	3	1
Pennsy	2	1	2	1	2	1	2	1
Peugeot	3	2	3	2	3	2	3	2
Phianna	..	..	3	1	3	1	3	1
Piedmont	3	1	3	1	3	1	3	1
Pierce-Arrow	3	2	3	2	3	2	3	2
Pierce-Arrow 2-Ton	3	2	3	2	3	2	3	2
Pierce-Arrow 5-Ton	3	2	3	2	3	1	3	1
Pilgrim	2	1	2	1	2	1	2	1
Pilliod	3	1	3	1	3	1	3	1
Pilot	2	1	2	1	2	1	2	1
Pioneer Trucks	3	1	3	1	3	1	..	..
Pneumobile	2	1	2	1	2	1	2	1
Pope-Hartford	..	..	..	..	..	..	3	1
Portet	3	2	3	2	3	2	3	2
Pratt	..	..	..	..	..	..	2	1
Premier	4	4	4	4	4	3	3	2
Premocar	2	1	2	1	2	1	..	..
Princess	2	1	2	1	2	1	2	1
Pullman	..	..	..	..	..	..	2	1
Puritan 8-Cyl.	..	..	..	..	2	1	2	1
Rainier Trucks	3	1	3	1	3	1	3	1
Raleigh	2	1	2	1	..	..	..	..
Rambler	..	..	..	..	..	..	3	2
Ranger	2	1	2	1	2	1	..	..
Ranger Trucks	3	1	3	1	..	..	..	..
R. C. H.	..	..	..	..	..	..	2	1
Regal	..	..	..	..	..	..	2	1
Reliance Trucks	3	2	3	2	3	1	3	1
Renault	3	2	3	2	3	2	3	2
Reonoc Trucks	..	..	..	..	3	1	3	1
Reo	2	1	2	1	2	1	2	1
Republic Trucks	3	1	3	1	3	1	3	1
Re Vere	3	1	3	1	3	1	2	1
Reya Trucks	3	1	3	1	3	1	3	1
Richard	2	1	2	1	2	1	2	1
Richmond	2	1	2	1	2	1	2	1
Rickenbacker	3	2	..	..	..	..	..	..
Riker Trucks	3	1	3	1	3	1	3	1
Roamer	2	1	2	1	2	1	2	1
Robinson Fire Eng.	4	4	4	4	4	4	4	4
Rolls-Royce	4	4	4	4	4	4	4	4
Romer	2	1	2	1	2	1	..	..
Rose 6 Cyl.	..	..	..	..	..	..	3	1
Rotary	4	4	..	..	..	..	..	..
Rowe Trucks	3	1	3	1	3	1	3	1
Royal Trucks	..	..	..	..	3	2	3	2
Rush Trucks	3	1	3	1	3	1	3	1
Russell Knight	4	4	4	4	4	4	4	4
R. & V. Knight	4	4	4	4	4	4	4	4
Saginaw Trucks	3	1	3	1	3	1	3	1
Sampson Trucks	3	1	..	..	..	..	3	2
Sandow Trucks	3	1	3	1	3	1	3	1
Sandusky Trucks	3	1	3	1	3	1	3	1
Sanford Trucks	3	1	3	1	3	1	3	1
Saurer Trucks	3	1	3	1	3	1	3	1
Saxon	2	1	2	1	2	1	2	1
(Romcon Lubricator)	5	5	..	..	..	..	..	..
Sayers 6-Cyl.	2	1	2	1	2	1	2	1

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Schacht Trucks	3	1	3	1	3	1	3	1
Schleicher Trucks	3	1	3	1	3	1	3	1
Scripps-Booth 4-Cyl.	..	..	..	..	2	1	2	1
(Other models)	3	2	3	2	3	2	3	2
Seagrave Fire Engine	4	4	4	4	4	4	4	4
Selden Trucks	3	1	3	1	3	1	3	1
Seneca	2	1	2	1	..	..	..	..
Seneca Trucks	3	1	3	1	3	1	3	1
Service Trucks	3	1	3	1	3	1	3	1
Severin	2	1	2	1	..	..	..	..
S. G. V.	..	..	..	..	..	..	3	2
Signal Trucks	3	1	3	1	3	1	3	1
Simplex	..	..	..	..	..	..	2	1
Simplex Crane	3	2	3	2	3	2	3	2
Singer	..	..	..	..	..	..	2	1
Skelton	2	1	2	1	2	1	..	..
Smith Trucks	3	1	3	1	3	1	3	1
Southern Trucks	3	1	3	1	3	1	3	1
Southern Six	2	1	2	1	..	..	..	..
Spaulding	..	..	..	..	2	1	2	1
Speedwell	..	..	..	..	..	..	2	1
Sperling	2	1	..	..	..	..	..	..
Standard 8-Cyl.	2	1	2	1	2	1	2	1
Standard Trucks	3	1	3	1	3	1	3	1
Stanley Steamer	6	6	6	6	6	6	6	6
Stanwood	2	1	2	1	2	1	2	1
States	..	..	..	..	..	..	2	1
Stearns Knight	4	4	4	4	4	4	4	4
Steele Trucks	..	..	..	..	..	..	3	1
Stegeman Trucks	3	1	3	1	3	1	3	1
Stephens	3	2	3	2	3	2	3	2
Sterling Trucks	3	1	3	1	3	1	3	1
Sternberg Trucks	..	..	..	..	..	..	3	1
Stewart Trucks	..	..	..	..	3	1	3	1
Stevens-Duryea	3	1	3	1	3	1	3	1
Stoughton 1 & 1½-Ton	3	1	3	1	3	1	..	..
Stoughton 2 & 3-Ton	3	1	3	1	3	1	..	..
Studebaker	2	1	2	1	2	1	2	1
Studebaker 1-Ton	3	1	3	1	3	1	3	1
Stutz	3	2	3	2	3	2	3	2
Sullivan Trucks	3	1	3	1	3	1	3	1
Sun	..	..	..	..	2	1	2	1
Superior Trucks	..	..	..	..	..	..	3	1
Super Trucks	3	2	3	2	3	2	..	..
Tegetmeier Trucks	3	1	3	1	3	1	3	1
Templar	3	1	3	1	3	1	3	1
Thomas "MF"	..	..	..	..	..	..	2	1
Thomas Trucks	3	1	3	1	3	1	3	1
Tiffin Trucks	3	1	3	1	3	1	3	1
Titan Trucks	3	2	3	2	3	2	3	2
Touraine	2	1	2	1	2	1	2	1
Tower Trucks	3	1	3	1	3	1	3	1
Trahold Trucks	3	1	3	1	3	1	3	1
Traffic Trucks	3	1	3	1	3	1	..	..
Transit Trucks	3	1	3	1	3	1	3	1
Transport ¾-Ton	3	2	3	2	3	2	..	..
Transport (other models)	3	1	3	1	3	1	..	..
Traylor Trucks	3	1	3	1	3	1	3	1
Triangle Trucks	3	1	3	1	3	2	3	1
Trojan	..	..	..	..	..	..	3	1
Trumbull	..	..	..	..	..	..	2	1
Twin City Truck	3	1	3	1	..	..	..	..
Tulsa	2	1	2	1	2	1	..	..
Ultimate Truck	3	2	3	2	..	..	..	..
Union Trucks	3	2	3	2	3	2	3	2
United 5-Ton	3	2	3	2	3	2	3	2
United (other model)	3	1	3	1	3	1	3	1
United 4-Wheel Dr.	3	2	3	2	3	2	3	2
U. S. Trucks	3	1	3	1	3	1	3	1
Universal Trucks	3	1	3	1	3	1	3	1
Van Winkle	..	..	..	..	2	1	2	1
Vaux Hall	3	2	3	2	..	..	..	..
Veerac Trucks	..	..	..	..	..	..	3	1
Velie	2	1	2	1	2	1	2	1
Velie Trucks	3	1	3	1	3	1	3	1
Veteran	3	2	3	2	3	2	..	..
Veteran Trucks	3	2	3	2	3	2	..	..
Viall Trucks	..	..	..	..	..	..	3	1

VEEDOL

AUTOMOBILE OIL CHART

Continued from Preceding Page.

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Vim Trucks	3	1	3	1	3	1	3	1
Vogue	2	1	2	1	..	..	..	..
Voltz Trucks	3	1	3	1	3	1	3	2
Vulcan	..	..	..	..	2	1	2	1
Vulcan Trucks	..	..	..	..	2	1	2	1
Waco	2	1	2	1	2	1	3	1
Wagenhals Trucks	3	1	3	1	3	1	3	1
Walter Trucks	3	1	3	1	3	1	3	1
Ware Trucks	3	1	3	..	3	1	3	1
Warren	..	..	..	..	..	..	2	1
Washington	2	1	2	1	..	..	..	..
Watson Trucks	3	1	3	1	3	1	3	1
Wescott	3	1	3	1	3	1	3	1
Wharton 8-Cyl.	2	..	2	1	2	1	2	1
Wharton 4 & 6-Cyl.	3	1	3	1	3	1	..	..
White	..	..	..	..	..	..	3	2
White Trucks	3	2	3	2	3	2	3	2
White Hickory Trucks	3	1	3	1	3	1	..	..
Whitwood	3	2	3	2	3	2	3	2
Wichita Trucks	3	1	3	1	3	1	3	1
Wilcox Trucks	3	1	3	1	3	1	3	1

MODELS	1922		1921		1920		1919	
MAKE OF CAR	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Wills Sainte Claire	3	1	3	1	..	..	..	..
Willys Knight	4	4	4	4	4	4	4	4
Willys Utility	3	1	3	1	3	1	3	1
Wilson Trucks	3	1	3	1	3	1	3	1
Winther	2	1	..	..	..	..	..	..
Winther Trucks	3	2	3	2	3	2	3	2
Winton	3	2	3	3	3	2	3	2
Witt Will Trucks	3	1	3	1	3	1	3	1
Wisconsin Trucks	3	1	3	1	3	1	3	1
Wolverine	..	..	..	..	3	2	3	2
Wolverine Trucks	..	..	..	..	3	1	3	1
Wolseley	3	2	3	2	3	2	3	2
Ward La France Trucks	3	2	3	2	3	2	..	..
Wonder Trucks	3	1	3	1	3	1	3	1
Woods	2	1	2	1	2	1	2	1
Woods Mobilette	2	1	2	1	2	1	3	1
W. S. Trucks	3	1	3	1	3	1	3	1
Yale 12-Cyl.	..	..	..	..	2	1	2	1
Yellow Cab	2	1	2	1	2	1	2	1
Zimmerman	..	..	..	..	..	..	3	2
Zip	..	..	..	..	..	..	2	1

GASOLINE, KEROSENE AND ELECTRIC VEHICLES

	Tight Cases	Leaky Cases
Transmission Differential Worm Drive	VEEDOL Trans-Gear Oil	VEEDOL Gear Compound
Grease Cups	VEEDOL Medium Cup Grease	
High Pressure Greasing Systems	VEEDOL Medium Cup Grease, or VEEDOL Trans-Gear Oil	
Driving Chains Water Pump Packing Exposed Friction Surfaces Spring Leaves	VEEDOL Graphite Grease	

IMPORTANT NOTICE

VEEDOL Summer and Winter Recommendations refer to the following temperatures—

Summer—Below 90 degrees F. Winter—Below Freezing.
In Hot Climates, where temperatures range—
Summer—Above 90 degrees F. Winter—Above Freezing.
Use next heavier grades of VEEDOL as indicated by KEY NUMBERS.

GASOLINE AND KEROSENE TRACTOR ENGINES

Lubricating System	Summer	Winter
Force Feed & Splash	VEEDOL No. 4	VEEDOL No. 4
Separate Force Feed	VEEDOL No. 5	VEEDOL No. 4

STATIONARY GAS, GASOLINE AND KEROSENE ENGINES

Lubricating System	Summer	Winter
Gravity Feed & Splash	VEEDOL No. 2	VEEDOL No. 1
Force Feed	VEEDOL No. 3	VEEDOL No. 2

MOTOR-CYCLE—Summer and Winter—VEEDOL No. 5

VEEDOL No. 1 (Light Zero) A light, low cold test oil. Especially prepared for easy starting in cold weather.
VEEDOL No. 2 (Medium) A medium oil. Also suitable for cold weather
VEEDOL No. 3 (Heavy) A heavy medium bodied oil.

Size container	Barrel	½ Barrel	Drum	½ Drum	¼ Drum	5 Gal. Cans	1 Gal. Cans	½ Gal. Cans
Gallons in container	50	30	55	30	15	..	10	20
Per gallon	$1.06	$1.11	$1.06	$1.11	$1.21	$1.21	$ ..	$....
Per can	$....	$....	$....	$....	$....	$.. .	$1.41	$0.75
VEEDOL No. 4 (Special Heavy) A heavy oil for Knight engines, tractors and heavy duty trucks								
Per gallon	$1.12	$1.17	$1.12	$1.17	$1.27	$1.27	$ ..	$...
Per can	$....	$....	$....	$....	$....	$	$1 47	$0 76
VEEDOL No. 5 (Extra Heavy) A very heavy oil for motorcycles and high power tractors.								
Per gallon	$1.29	$1.34	$1.29	$1.34	$1.44	$1.44	$....	$.. .
Per can	$....	$....	$....	$....	$....	$....	$1.64	$ ...
VEEDOL (Trans-Gear). A heavy Grease for Transmissions for Automobiles, Tractors, etc.								
Per gallon	$0.90	$.095	$0.90	$0.95	$1.05	$1.05	$....	$....
Per can	$....	$....	$....	$....	$....	$....	$1.25	$.. .

VEEDOL Cup and Graphite Greases (Summer and Winter Grades)

Size container	Barrel	½ Barrel	100 lb. Keg	50 lb. Can	25 lb. Can	6-10 lb. Cans	12-5 lb. Cans	36-1 lb. Cans
Per pound	$0.14¾	$0.14¾	$0.15½	$0.17	$0.18½	$0.18¾	$0.19¾	$0.25
			Gear Compound					
Per pound	$0.16¼	$0.16¾	$0.17½	$0.19	$0.20½	$0.20¾	$0.21¾	$0.26¼

Note—Drums and Cans not returnable

ELECTRIC FANS

Western Electric.

DESK AND WALL

8-INCH ALTERNATING-DIRECT CURRENT FAN

Four-Blade, Cast Iron Frame, Series Type.

Universal Motor for 100-120 Volt Circuits,

Non-Oscillating.

List No.	Volts	Circuits on which Fan will operate	Speeds R. P. M. Switch Position A. C.	D. C.	Net Retail Price
7704	100	25, 30, 40, 50 and 60 Cycles Alternating Current, and Direct Current	1850	1950	$10.00
7707	32	Direct Current	....	1950	10.00

Weight, each, about 6 pounds.

Packed in standard cases of 10 Fans of the same list number in a case. (Each fan boxed separately.)

Prices include 8 feet of black new code reinforced cord with separable plug attached to base of fan.

The fan as listed for 110 volts will operate on all the circuits mentioned without any appreciable variation in speeds.

Watts: 110 volts on A. C. position, 25; 110 volts on D. C. position. 30: 32 volts D. C. 30.

This is a low priced cast iron frame fan suitable for all services where a small size fan is required. It is especially popular for use in homes and small private offices. Since the 110-volt fans will operate on any direct current circuit of 100 to 120 volts or on alternating current circuits where the frequency is anything from 25 to 60 cycles, and the voltage is anything from 100 to 120 volts the same fan can be used in practically every locality.

A hinge joint permits the blades to be adjusted to any desired elevation and adapts the fan for desk or wall bracket position. The switch in base provides for starting and stopping of fan and gives operation positions on alternating and direct current circuits.

The 8-inch single speed fan bearing differs from the others in that oil is used for lubrication instead of grease. An oil reservoir is cast in the hub which is packed with felt which bears against the shaft. The oil is dropped into this felt-packed reservoir through and oil hole in the top of the hub.

ELECTRIC FANS

Western Electric.

DESK AND WALL

NINE-INCH

Non-Oscillating.

Alternating—Direct Current.

Universal Fan.

Universal Current 9-inch, Non-oscillating Desk Position.

Specifications

Four blades, three speeds, drawn steel frame, series type, 100-120-volt universal motor, hinge joint for desk desk or bracket position, switch on highly polished surfaces without marring.

110-volt fans will operate on any D. C. circuit 100 to 120 volts, and any A. C. circuit 25 to 60 cycles, 100 to 120 volts.

This is an extra high grade small fan of drawn steel construction. The 9-inch size is ideal for the home or small office and this fan or the 9-inch oscillator should be selected for such service

List No.	Volts	Circuits on which Fan will operate	Speeds R. P. M. 1	2	3	Net Retail Price
		25, 30, 40, 50 and 60 Cycles A. C. and Direct Current	1600 on A. C. to 2300 on D. C.	1200 on A. C. to 1700 on D. C.	1000 on A C. to 1400 on D. C.	
6000	110					$17.50
6002	220	60 Cycles A. C.	1650	1350	1000	19 50
6003	32	Direct Current	1650	1300	1000	17.50
6004	220	Direct Current	1650	1300	1000	19.50

Prices include 8 feet of black new code reinforced cord with separable plug attached to base of fan.

Add $1.00 to price of 110 volts for any voltage between 20 and 110 volts (except 32 volts).

Add $1.00 to price of 220 volts for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

The fan as listed for 110 volts will operate on all circuits mentioned without appreciable variation in speed.

Watts on A. C.—High speed, 35; second speed, 30; low speed, 26.

Watts on D. C.—High speed, 45; second speed, 40; low speed, 35.

NINE-INCH

Oscillating.

Alternating—Direct Current

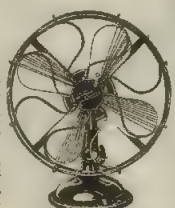
Universal Fan.

Specifications

Four blades, 3 speeds, drawn steel frame, series type, 100-120-volt universal motor, standard oscillating mechanism, hinge joint for a desk or bracket mounting, base felt covered.

110-volt ian suitable for any D. C. circuit 100 to 120 volts and any A. C. circuit 25 to 60 cycles, 100 to 120 volts.

This fan is the same as the 9-inch non-oscillating type, except that it has the new standard type oscillating mechanism, readily adjustable for straight breeze or any degree of oscillation without use of tools.



Universal Current 9-inch Oscillating Desk Position.

List No.	Volts	Circuits on which Fan will operate	Speeds R. P. M. 1	2	3	Net Retail Price
		25, 30, 40, 50 and 60 Cycles, A. C. and Direct Current	1600 on A. C. to 2300 on D. C.	1300 on A. C. to 1700 on D. C.	1000 on A. C. to 1400 on D. C.	
6100	110					$22 00
6102	220	60 Cycles, A. C.	1600	1350	1000	24.00
6103	32	Direct Current	1650	1300	1000	22.00
6104	220	Direct Current	1650	1300	1000	24.00

Weight, each, about 9 pounds.

Prices include 8-feet black new code reinforced cord with separable plug attached to base of fan.

Add $1.00 to price of 110 volts, for any voltage between 20 and 110 volts (except 32 volts).

Add $1.00 to price of 220 volts, for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

The fan as listed for 110 volts will operate on all circuits mentioned without any appreciable variation in speed.

Watts on A. C.—High speed, 35; second speed, 30; low speed, 25.

Watts on D. C.—High speed, 45; second speed, 40; low speed, 35.

12 AND 16-INCH

Non-Oscillating.

Alternating Current Fans.

Specifications.

Four blades, three speeds, drawn steel frame, non-oscillating, induction type, trunion joint for deck or bracket mounting and swivel to turn blades in any horizontal direction, base felt covered and of larger diameter to prevent tipping.

Bearing bushings, oil cups, switch base, blades, guards and other details interchangeable with other 12 and 16 inch fans.

List numbers 7404 and 7454, which have a new type of winding, are supplied for 110 volts 60 cycles.

List No.	Size. Inches	Volts	Cycles	Speeds R. P. M. 1	2	3	Net Retail Price
6200	12	100-120	*25-30	1500	1275	1125	$24.50
6204	12	100	60	1550	1350	1160	23.50
7404	12	220	60	1500	1275	1125	26.50
6205							
6250	16	100-120	*25-30	1475	1250	1100	28.00
7454	16	110	60	1600	1250	1075	27.00
6254							
6255	16	220	60	1475	1250	1100	29.00

*The 25-30 cycle fans are series type.

The prices include 8 feet of black new code reinforced cord with separable plug attached to the base of the fan.

The watts are as follows for high, second and low speeds respectively:

12 inch, 25-30 cycles—50, 42, 35; 12 inch 110 volt, 60 cycles—46, 37, 33; 220 volt, 60 cycles—60, 47, 35; 16 inch, 25-30 cycles—75, 65, 60; 16 inch, 110 volt, 60 cycles—76. 65. 59; 220 volt, 60 cycles—85, 75, 65.

All 110 volt 40 cycle fans are the same price as 110 volt 25-30 cycle fans.

All 110 volt and 220 volt 50 cycle fans are the same price as the 110 volt and 220 volt 60 cycle fans respectively.

All list 62 fans will be superseded by list 74 when present stocks are exhausted.

ELECTRIC FANS

Western Electric.

DESK AND WALL

12 AND 16-INCH

Oscillating

Alternating Current Fans.

Specifications.

Four blades, three speeds, drawn steel frame, induction type, standard oscillating mechanism, trunnion joint for desk or bracket mounting, base felt covered and of larger diameter to prevent tipping.

Similar design to 12 and 16 inch Direct Current and NON Oscillating Alternating Current fans, and major parts are interchangeable.

List numbers 7804 and 7854, which have new type oscillating mechanism, and new winding are supplied for 110 volts, 60 cycles.

List No.	Size, Inches	Volts	Cycles	Speeds R. P. M. 1	2	3	Net Retail Price
6300	12	100-120	*25-30	1475	1250	1100	$31.00
7804	12	110	60	1485	1300	1100	30.00
6304							
6305	12	220	60	1476	1250	1100	32.00
6350-B	16	100-120	*25-30	1450	1225	1100	36.00
7854	16	110	60	1500	1250	1075	35.00
6354-B							
6355-B	16	220	60	1450	1225	1100	37.00

*The 25-30 cycle fans are series type.

Prices include 8 feet of black new code reinforced cord with separable plub attached to base of the fan.

The watts are as follows for high, second and low speeds respectively:

12 inch, 25-30 cycles—55, 47, 40; 12 inch, 110 volt, 60 cycles—48, 38, 34; 220 volt, 60 cycles—65, 54, 44; 16 inch, 25-30 cycles—79, 65, 55; 16 inch, 110 volt, 60 cycles—78, 66, 60; 220 volt, 60 cycles—90, 80, 70.

All 110 volt 40 cycle fans are the same price as 110 volt, 25-30 cycle fans.

All 110 volt and 220 volt 50 cycle fans are the same price as the 110 volt and 220 volt 60 cycle fans respectively.

All list 63 fans will be superseded by list 78 when present stocks are exhausted.

12 AND 16-INCH

Non-Oscillating.

Direct Current Fans.

Specifications.

Four blades, three speeds, drawn steel frame, series type, trunnion joint for desk or bracket mounting, swivel to turn blades in any horizontal direction, base felt covered and of larger diameter to prevent tipping.

Similar to 12 and 16 inch Alternating Current fans and bearings, oil cups, switch base, blades, guard and other important parts are interchangeable.

Through the use of drawn steel parts, the fan is very light in weight; 15 pounds for 12-inch size and 18 pounds for 16-inch size, and is easily portable, but very rugged.

List No.	Size, Inches	Volts	Speeds R. P. M. 1	2	3	Net Retail Price
6400	12	32	1500	1250	1100	$23.50
6401	12	110	1500	1250	1100	23.50
6402	12	220	1500	1250	1100	26.00
6450	16	32	1475	1225	1075	27.00
6452	16	110	1475	1225	1075	27.00
6452	16	220	1475	1225	1075	29.50

Weight, each about, 12 inch, 15 pounds; 16 inch, 18 pounds.

Prices include 8 feet of black new code reinforced cord with separable plug attached to base of fan.

Add $1.00 to prices of 110 volts for any voltage between 20 and 110 volts (except 32 volts).

Add $1.00 to prices of 220 volts for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

The watts are as follows for high, second and low speeds respectively:

12-inch, 32, 110 and 220 volts—45, 40, 35; 16-inch, 32, 110 and 220 volts—55, 50, 45.

All 110 volt 40 cycle fans are the same price as 110 volt 25-30 cycle fans.

All 110 volt and 220 volt 50 cycle fans are the same price as the 110 volt and 220 volt 60 cycle fans respectively.

12 AND 16-INCH

Oscillating.

Direct Current Fans.

Specifications.

Four blades, three speeds, drawn steel frame, series type, trunnion joint for desk or bracket mounting, standard oscillating mechanism, base felt-covered and of large diameter to prevent tipping.

Similar in design to 12 and 16-inch Direct Current Non-Oscillating fans and to Alternating Current Oscillating and Non-Oscillating fans, and many parts are interchangeable.

List numbers 7901 and 7951 have new type oscillating mechanism.

List No.	Size, Inches	Volts	Speeds R. P. M. 1	2	3	Net Retail Price
6500	12	32	1475	1175	1090	$30.00
7901	12	110	1550	1300	1100	30.00
6501						
6502	12	220	1475	1175	1090	32.50
6550-B	16	32	1450	1150	975	35.00
7951	16	110	1500	1250	1075	35.00
6551-B						
6552-B	16	220	1450	1150	975	37.50

Prices include 8 feet of black new code reinforced cord with a separable plug attached to base of fan.

Add $1.00 to prices of 110 volts for any voltage between 20 and 110 volts (except 32).

Add $1.00 to prices of 220 volts for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

The watts are as follows for high, second and low speeds respectively:

12 inch, 110 volts—46, 40, 35; 32 and 220 volts—50, 45, 40; 16 inch, 110 volts—59, 52, 47; 32 and 220 volts—60, 55, 50.

All list 65 fans will be superseded by list 79 when present stocks are exhausted

ELECTRIC FANS

Western Electric.

CEILING

SPECIFICATIONS—ALTERNATING CURRENT CEILING FANS

Rotor and Stator.

The motor is self-starting; a highly efficient shaded pole type winding is used. There is no delicate starting winding or complicated centrifugal starting switch to cause trouble.

The rotor core is built up of steel laminations which are mounted on a cast iron spider. The copper conductors are securely riveted to copper end rings, making a rotor which is practically indestructible.

The stator core is built up of steel laminations which are securely attached to the motor frame. The stator coils are securely attached to the core and thoroughly insulated from it.

The shaft is hollow to permit the wiring to run through it. It is made of high grade machine steel accurately ground to size.

Bearings.

The rotor weight is supported on a ball bearing which is immersed in oil. Horizontally the rotor is held in position by a long vertical bearing which is made in the rotor spider. The oil for the fan is poured into the recess in the top of the motor frame. From here it passes through the duct into the upper oil chamber, thence into th duct and down into the lower oil chambers. A spiral groove cut in th bearing in the rotor acts as a centrifugal pump when the fan is operating, thus providing a constant circulation of oil along the shaft from the lower oil chamber into the upper.

A screw in the lower oil chamber is provided to prevent too much oil being supplied to the fan. This screw should be removed when oiling the fan. Another screw in the bottom of the oil chamber is provided for draining the oil.

Speed Coil.

The speed coil is provided with a laminated steel core and is carefully insulated from the core. The starting switch is connected to the speed coil through the stationary hollow shaft.

Voltage Range.

The fans will operate satisfactorily on voltages 10% above of 5% below the normal 110 or 220 volts.

Fan can be furnished for special voltage and frequency circuits, but orders for such fans are not subject to cancellation. Shipments are made from the factory, Springfield, Ohio. The customer should specify the voltage and cycles of his circuit when ordering such fans, and fans will be supplied to suit the circuit.

SPECIFICATIONS—DIRECT CURRENT CEILING FANS

Armature and Field.

The armature has a laminated steel core which is mounted securely on the shaft. The winding is well insulated from the core. The shaft is of hardened steel, ground to gauge at th bearing surfaces. The commutator is built up of th best grade hard-drawn copper. The segments have extra depth and are insulated by a selected grade of soft amber mica, which wears evenly with the copper.

The pole pieces are integral with the frame. The field coils are mounted securely on the pole pieces and are carefully insulated from them.

Bearings.

The bearing bushings are made of high grade babbitt and are held in place by set screws. They are immersed in oil, each bearing having its separate oil chamber.

The oil for the upper bearing is poured into the oil reservoir by means of a chute which is furnished with the fan. The lower oil reservoir is filled by means of a can, a hole which is closed by a screw and leather washer being provided for the entrance of the spout of the can. A screw is also provided in the upper reservoir to determine the height to which the oil reservoir should be filled.

Rheostat.

Speed regulation is obtainable by means of the rheostat which is connected to the starting switch.

Voltage Range.

The fans will operate satisfactorily on voltages 10% above or below the normal 110 volts, and 5% above or below the normal 220 volts.

Special Voltages.

Fans can be furnished in special voltages ranging from 32 to 250 volts. These special voltage fans will operate on voltages 5% higher or lower than the rated voltages.

Special voltage fans are not regularly carried in stock, and orders for such fans are not subject to cancellation. Shipments are made from the factory at Springfield, Ohio. The customer should specify the voltage of his circuit when ordering such fans, and fans will be supplied to suit the circuit.

GENERAL SPECIFICATIONS—ALTERNATING AND DIRECT CURRENT CEILING FANS

Finish.

All parts are highly polished before the finish is applied, and special care is used in the application of each coat.

Blades and Speeds.

The speeds of Western Electric Fans have been carefully determined after years of experience, and the pitch of the blades and corresponding speeds give the maximum breeze, with quiet operation and economy in wattage consumption.

Switch.

The switch is a perfected snap type which cannot bridge contacts and cause them to burn. The switch base has great mechanical and dielectric strength and is not affected by oils or moisture. In the direct current fans it is located at the top of the motor, where all connections are easily accessible. The key extends through the shaft to the bottom of the blade carrier. In the alternating current fans the switch is located below the blade carrier and is operated by a short key.

Suspensions.

A hanger rod is not furnished. The motor housing and hanger are drilled and tapped for standard ¾-inch iron pipe or conduit for use as hanger rod. Canopy, hook and insulated hanger are furnished.

CEILING

MODEL 67 ALTERNATING CURRENT CEILING FANS

56 Inches, Four Blades, Three Speeds, Plain Type—Black Enamel Finish.

Model 67.

This is a higghly efficient and reliable fan. The motor and canopy are of plain and pleasing design, finished in two coats of baked black enamel, with two gilt lines around the motor body. The blade shanks are oxidized copper plated and the blades are made of a selected grade of hard wood with polished mahogany finish.

The motor is the self-starting induction type.

A four-point, three-speed switch fitted in a casing at the lower end of the stationary shaft serves to start and stop the fan as well as to regulate its running speeds.

List No.	Volts	Cycles	Speeds R. P. M. 1	2	3	Net Retail Price
6714	110	60	215	175	120	$55.00
6715	220	60	215	175	120	57.00

Weight, each, about 70 pounds.

Prices include ceiling canopy, hook and insulated hanger. Hanger rod is not furnished by us. The motor housing and hanger are drilled and tapped for stnadard ¾-inch iron pipe or conduit for use as hanger rod.

The motor is not wired for lights nor furnished with electrolier attachment; but the switch casing below the blade carrier has four neatly plugged holes suitable for standard ⅜-inch (⅛-inch pipe tap) brass fixture pipe connection, and the customer can easily wire the motor and attach electrolier fittings for lights if desired.

Watts at high, second and low speeds respectively: 60 cycles—175, 160, 135.

110 volt 40 cycle fans are the same price as 110 volt 25-30 cycle fans.

All 110 volt and 220 volt 50 cycle fans are the same price as the 110 volt and 220 volt 60 cycle fans respectively.

MODEL 69 DIRECT CURRENT CEILING FAN

56 Inches, Four Blades, Three Speeds, Plain Type—Black Enamel Finish.

This is a very efficient and powerful fan which is very moderate in price. The fan has been changed to the new smooth surface design, but internally it is the same as the old style "B." The motor and canopy are finished in two coats of baked black enamel with two gilt lines around the motor body.

The blades and shanks are the same as the style "H" and are interchangeable with them. However, they are not interchaneable with the old style "B."

A four-point, three speed switch, fitted in a casing at the upper end of the motor, serves to start and stop the fan as well as to regulate its running speed.

List No.	Volts	Speeds R. P. M. 1	2	Net Retail Price
8900	32	220	180	135	$50.00
8901	110	220	180	135	50.00
6902	220	220	180	135	52.50

Weight, each, about 67 pounds.

Prices include ceiling canopy, hook and insulated hanger. Hanger rod is not furnished by us. The motor housing and hanger are drilled and tapped for standard ¾-inch iron pipe or conduit for use as hanger rod.

Add $1.00 to the 110-volt prices for any voltage between 32 and 110 volts.

Add $1.00 to the 220-volt prices for 235 or 250 volts.

Special voltages between 110 and 220 volts, same price as 220 volts.

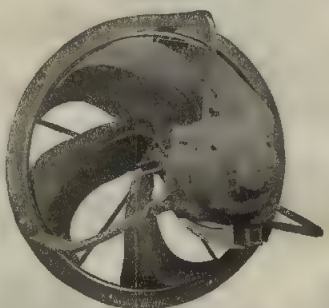
Since the shaft revolves with the armature the motor is not suited for wiring for electrolier fittings.

Watts at high, second and low speeds respectively, 110 and 220 volts—150, 115, 90.

PROPELLER VENTILATING FANS

ILG

THE SELF-COOLED MOTOR PROPELLER FAN



Experience has proved that open motors can not be used on propeller fans, because dirt and grease are drawn into motor. If fully enclosed motor is used, the motor efficiency is decreased, due to overheating. If partially covered motor is used, suction eventually draws dirt and grease through the enclosing covers.

The ILG Self-Cooled Motor meets these difficulties, using a motor that is covered, but ventilated. The suction that is created at the center of the fan draws a small quantity of air from the outside into the vent pipe and through the motor, thus ventilating same. There is no tendency to draw dirt or grease through the hood into the motor, because air pressure is equal both inside and outside of hood.

(Continued on following page.)

(Continued from preceding page.)

RESTAURANTS

Propeller exhaust fans provide the simplest and most economical ventilation for all ordinary types of restaurants, for lunch room in industrial plants and schools, for saloons with cafe attached, and dining rooms and kitchens of hotels, clubs, department stores, lodge halls, etc.

LAUNDRIES

Propeller exhaust fans are ideal for the ventilation of laundries, dry cleaning plants, bleaching mills, etc., because the chief problem is to get rid of heat, steam, and moisture. Fan should be so placed that air is drawn across floor to be ventilated in longest possible path and should be figured to handle the cubical contents in from three to five minutes.

THEATRES

For the ventilation of theatres and auditoriums of sechools, churches, lodges, etc., use propeller exhaust fans. Best results are usually obtained by placing two fans in rear wall, about eight feet from floor line, drawing air from front. For the average picture theatre, fans are placed in rear wall back of screen and grills are placed on each side of screen. For best results, the fans should be figured to exhaust together the entire cubical contents of auditorium in four to five minutes. If theatre has balcony, air must be allowed to enter at rear of balcony as well as first floor.

If it is not possible to put fans in rear wall, one fan can be placed on roof in pent house, drawing through large grill in ceiling. In some cases, exceptionally good cooling can be obtained by using fans at rear to exhaust and one or two fans in front blowing in.

For all theatres, churches, and schools, use the quiet running, low speed fans, which are designed for this purpose, namely, the Type A in direct curent, and the Types SL and ML in alternating current.

GARAGES

Garages offer a new field for ventilation, and the problem is best solved with exhaust fans. To remove the poisonous, nauseating fumes in a garage, place a fan in rear wall and draw from front. Keep the fan as low as possible, because the fumes hang near the floor. Figure size of fan to handle cubical contents of garage in five to ten minutes.

OFFICES

Offices of all kinds can be satisfactorily and properly ventilated for both winter and summer with propeller exhaust fans. Figure size of fan or fans to handle cubical contents of room in five to eight minutes. Place fan so that air is drawn in longest possible path, and locate fan if possible in part of office where adjacent windows can be kept closed. In summer, all other windows can be kept open and perfect ventilation results.

In the average office, the system works in the winter also, because the natural leakage through windows will let in enough air without drafts. If, however, a positive inlet of warmed, fresh air is desired, a few radiators can be boxed in to lower corners of nearest windows, and air will be drawn in over radiators and warmed. In some cases grills with dampers can be provided in walls behind radiators and air will be drawn in directly through radiators, the amomunt being adjusted with dampers.

WORK ROOMS

In factories where a large number of people are employed at an industrial process, propeller exhaust fan can be used to great advantage. Fan can be placed in window, drawing from windows opposite or in penthouse on roof or in sides or front of saw-tooth roof or in sides of monitor roof. Fan is figured to handle cubical contents in from two to ten minutes, depending on number of workers and nature of process.

This system can be used for paper box factories, tailoring shops, garment and clothing factories of all kinds, glove, hat, and corset factories, kiitting mills, etc.

As previously explained, the system can be used in winter as well as in summer by boxing in some of the radiators to windows and allowing incoming air to be warmed.

INDUSTRIAL PLANTS

The uses of exhaust fans in industrial plants are unlimited. They can be used in grinding rooms of paint factories, to draw off heat and fumes in press rooms of rubber mills, in packing plants, in paper mills, in the dye rooms of silk and other fabric mills, in the engine test room of automobile factories.

In tanneries and chemical laboratories where acid air must be handled, special self-cooled fans are furnished, made of specially treated metal and specially impregnated motor, at small extra cost. For extreme, acid condition wooden wheels can be used.

In factories using spraying systems of painting, exhaust fans are used, placed in back of spraying hoods to draw away paint fumes.

In enameling rooms, foundries, forge shops, fans placed in monitor roof drawing from windows on both sides give excellent results.

Fans for industrial plants must be figured to handle cubical contents of space to be ventilated in from one to ten minutes, depending on conditions. In case of doubt, write to our engineering department. We have handled a very great variety of industriol problems, and can give you recommendations based on actual experience.

DISTINCTIVE FEATURES OF THE ILG SELF-COOLED MOTOR PROPELLER FAN

FRAME—Flanges are liberally proportioned, protecting fan wheel and making a pleasing and durable installation possible.

WHEEL—Steel spokes and rims electrically welded; blades stamped to template and electrically welded to spokes. Hub bored and reamed, making wheel perfectly true and running without vibration, insuring long life to bearings.

SUPPORT ARMS—Form forged from machine steel, hght, strong and non-breakable.

MOTOR RING—Securely bolted to arms. Motor is machined circular to template, which makes it practical to install motor and frame separtely without disturbing alignment.

SELF-COOLED FEATURE—The only fan in the world on which the motor is protected, but cooled. These fans handle air at temperatures as high as 400 degrees F. safely. They also handle acids and moisture without fear of danger to motor. Motor is open for complete inspection by throwing back hood.

ILG fans are easy to take care of; therefore are taken care of.

(Continued on following page.)

(Continued from preceding page.)

OILING SYSTEM—Bearings are connected by copper pipe so that both bearings are oiled from front. No danger, no chance to neglect back bearing.

FINISH—ILG Fans are finished in distinctive ILG green special enamel, very pleasing to the eye and very durable.

METHOD OF TEST—Every fan is given a careful heat and running test on the exact current, voltage, and frequency on which it will be used. Consequently it is certain that fan will operate properly when installed.

GUARANTEE—**ILG fans are the only ones on the market on which one manufacturer takes full responsibility for design of complete fan, including motor. One nameplate means protection.**

PRICE LIST AND DATA PROPELLER FANS

Direct Current.

Size Type	Cu. Ft. of Air per Minute	Watts Consumed per Hour	Speed Free Air	Approx. Shipping Weight	List Price 110 Volt	220 Volt	550 Volt
12"B	1100	70	1400	30	$63.00	$64.00	$.....
16"B	1800	90	1200	40	77.00	80.00	.....
18"A	2830	110	1000	50	110.00	114.00	.....
16"B	3160	160	1100	95	135.00	140.00	.....
24"A	6800	275	800	220	210.00	215.00	220.00
30"A	9200	449	700	355	280.00	286.00	310.00
36"A	12800	560	600	395	360.00	365.00	380.00
42"B	18000	830	500	690	485.00	496.00	512.00
48"B	23400	1320	450	830	593.00	614.00	630.00
54"B	28600	1780	400	1100	850.00	866.00	884.00
60"B	38600	2270	360	1600	1000.00	1018.00	1030.00
72"B	44800	2850	270	2235	1269.00	1284.00	1320.00

Code indicates motors wound for 110 volts; prefix letter T for 220 volt, letter K for 500 volt.

For vertical running fans add 25 per cent to list price.

Size 12-inch and 16-inch not furnished for vertical running.

Type "A" is not furnished for vertical operation.

ILG Quick Release Extra Block Type Speed Controllers giving 50 per cent speed reduction are furnished with all direct current fans.

Alternating Current.

25 Cycles—Single Phase.

Size Type	Cu. Ft. Air per Minute	Watts Consumed per Hour	Speed	Approx. Shipping Weight	List Price 110 Volt	220 Volt
16"S	2800	130	1420	50	$74.00	$75.00
18"S	3500	190	1420	90	137.00	145.00
20"S	4700	240	1420	130	187.00	191.00
24"S	6000	280	720	180	235.00	238.00
30"S	9400	500	720	230	326.00	340.00
36"S	10000	520	490	390	420.00	424.00
42"S	17800	800	490	520	515.00	519.00

25 Cycles—Two and Three Phase.

Size Type	Cu. Ft. Air per Minute	Watts Consumed per Hour	Speed	Approx. Shipping Weight	List Price 110 Volt	220 Volt
16"M	2500	210	1420	105	$152.00	$155.00
20"M	4700	340	1420	180	177.00	183.00
24"M	6000	290	720	220	219.00	230.00
30"M	9400	500	720	335	298.00	314.00
36"M	10000	520	490	465	358.00	389.00
42"M	17800	800	490	610	437.00	454.00
48"M	26200	1200	490	830	525.00	542.00
54"M	29600	1600	360	1100	743.00	762.00
60"M	36000	2050	360	1520	968.00	987.00

PRICE LIST AND DATA PROPELLER FANS

Alternating Current.

60 Cycles—Single Phase.

Size Type	Cu. Ft. of Air per Min.	Watts Consu'd per Hour	Speed 60 Cycles	Approx. Shipping Weight	List Price 110 Volt	220 Volt
16"S	1600	100	1200	50	$70.00	$74.00
18"SL	2200	110	850	90	130.00	138.00
18"SH	3240	160	1140	90	130.00	138.00
20"SL	3300	140	850	130	160.00	164.00
20"SH	4800	200	1140	130	178.00	182.00
24"SL	6800	240	690	180	210.00	214.00
24"SH	7000	260	850	180	224.00	228.00
30"SL	7600	320	565	280	290.00	304.00
30"SH	9100	460	690	280	310.00	314.00
36"SL	10000	520	490	390	400.00	404.00
36"SH	12000	600	565	390	400.00	404.00
42"S	17800	800	490	520	490.00	494.00

60 Cycles—Two and Three Phase.

Size Type	Cu. Ft. of Air per Min.	Watts Consu'd per Hour	Speed 60 Cycles	Approx. Shipping Weight	List Price 106- 110 Volt	440- 220 Volt	550 Volt
16"M	3240	180	1140	105	$144.00	$153.00	
20"M	4800	300	1140	180	168.00	178.00	
24"ML	5800	240	690	220	208.00	226.00	
30"ML	7700	325	570	335	284.00	300.00	
36"ML	10000	320	490	402	336.00	352.00	
42"M	17800	800	490	610	400.00	416.00	
48"M	26200	1400	490	830	485.00	500.00	
54"M	29600	1300	420	1100	690.00	708.00	
60"M	38000	2200	330	1500	900.00	920.00	
72"M	48000	2800	285	2260	1100.00	1120.00	

16-inch Ilgair Kitchen Ventilator, 110 Volt "direct" and 25 or 60-cycle single phase "alternating" current, price $49.50 net.

Code indicates 110 volt; prefix letted T for 220, letter K for 440, letter Q for 550 volt.

Add 5 per cent to list price for 30 and 40 cycle.

Prices on application for 133 cycle.

FOR VERTICAL RUNNING ALTERNATING FANS ADD 25 PER CENT TO LIST PRICE.

Size 16-inch not furnished for vertical running.

NOTE—In direct current, Type A indicates the standard speed fan; Type B indicates fan of higher speed. Type A is to be used where quiet running is necessary.

In alternating current, single phase, Type SL indicates low speed, SH higgh speed; and in 2 or 3 phase, ML indicates low speed, MH high speed.

All ILG Self-Cooled Motor Propeller Fans are given a running test on the actual current and voltage of the circuit on which they will be used; and the guaranteed to be free from inherent electrical or mechanical defects for a period of one year from date of sale.

All fans are sent out with complete instructions for care and oiling, and with an oil can filled with the proper kind of oil for lubrication.

Chime Clocks Original and Artistic

LINCOLN ✻ WESTMINSTER CHIME

HEIGHT . . 9½ inches WIDTH . . 22¾ inches DIAL . . 7 inches, Silver
CASE, Solid Mahogany, Rich Dark Brown Bronze Cast Sash, Beveled Convex Glass
MOVEMENT, New 8 Day Pendulum, Rod Chime and Strike

List Price $75.75

SALISBURY ✻ WESTMINSTER CHIME

HEIGHT . 9¾ inches WIDTH 22 ¼ inches DIAL . inches Silver
CASE, Solid Mahogany, Rich Dark Brown Bronze Cast Sash, Beveled Convex Glass
MOVEMENT, New 8 Day Pendulum, Rod Chime and Strike

List Price $75.75

Prices Not Guaranteed

THREE HAND CARVED SOLID MAHOGANY TAMBOURS

Unique Designs Fitted With Our High Grade 8 Day Pendulum Movement With Hour and Half Hour Strike
Bronze Cast Sash

TAMBOUR No 26

HEIGHT, 9¼ inches WIDTH, 21 inches 5½ inch Silver Dial

List Price $49.50

TAMBOUR No. 18

HEIGHT, 9 inches WIDTH, 19 inches 5½ inch Silver Dial

List Price . $49.50

TAMBOUR No. 14

HEIGHT, 9 inches WIDTH, 19½ inches 5½ inch Silver Dial

List Price $49.50

Prices Not Guaranteed

Medium Size Mantle Clocks

QUEDA

HEIGHT 6 inches WIDTH 11¾ inches
12 Day Lever Movement Solid Mahogany Case
3½ inch Silver, or Silver Radium Dial

Silver Dial—List Price ..... $18.85 Silver Radium Dial—List Price $22.50

QUAYLE

HEIGHT 6½ inches WIDTH 12½ inches
12 Day Lever Movement Solid Mahogany Case
3½ inch Silver, or Silver Radium Dial

Silver Dial List Price ..... $16.00 Silver Radium Dial List Price $19.60

QUINBY

HEIGHT 5 inches WIDTH 13½ inches
12 Day Lever Movement Solid Mahogany Case
3½ inch Silver, or Silver Radium Dial

Silver Dial List Price $17.40 Silver Radium Dial—List Price $21.05

EVERYONE A DEPENDABLE AND ARTISTIC TIME PIECE

Prices Not Guaranteed

Chime Clocks ✻ Original and Artistic

HARKNESS ✻ WESTMINSTER CHIME

HEIGHT . . 9¾ inches WIDTH . . 22¾ inches DIAL . . 7 inches, Silver Finish
CASE, Solid Mahogany, Rich Dark Brown Cast Sash, Beveled Convex Glass
MOVEMENT, New 8 Day Pendulum, Rod Chime and Strike

List Price. $73.75

MILAN ✻ WESTMINSTER CHIME

HEIGHT . . 10 inches WIDTH . . 20¾ inches DIAL . . 7 inches, Silver Finish
CASE, Solid Mahogany, Rich Dark Brown Cast Sash, Beveled Convex Glass
MOVEMENT, New 8 Day Pendulum, Rod Chime and Strike

List Price. $94.00

CHIME CLOCKS ✻ ORIGINAL AND ARTISTIC

New Pendulum Movements of Simple Construction and Dependable Performance

ABBEY ✻ WESTMINSTER CHIME

HEIGHT . . 15¼ inches WIDTH . 10¼ inches DIAL . . 7 inches, Silver Finish
CASE, Solid Mahogany, Rich Dark Brown Cast Sash, Beveled Convex Glass
MOVEMENT, New 8 Day Pendulum, Rod Chime and Strike
List Price. $94.00

INGOMAR ✻ WESTMINSTER CHIME

HEIGHT . . 10 inches WIDTH . 20¼ inches DIAL . . 7 inches, Silver Finish
CASE, Solid Mahogany, Rich Dark Brown Cast Sash, Beveled Convex Glass
MOVEMENT, New 8 Day Pendulum, Rod Chime and Strike
List Price $94.00

Prices Not Guaranteed

MAHOGANY FINISHED TAMBOURS

TAMBOUR No. 50 List Price $16.00
HEIGHT, 9 inches WIDTH, 18 inches. Mahogany Finish. DIAL, 6 inches, White, Struck Sash, Convex Glass
MOVEMENT, 8 Day Half-hour Strike, Cathedral Gong Silver Dial, Cast Sash Extra List Price.. $2 90

TAMBOUR No. 55—List Price $20.50
HEIGHT, 9 inches WIDTH, 18 inches Mahogany Finish DIAL, 6 inches, White, Struck Sash, Convex Glass
MOVEMENT, 8 Day Half-hour Strike, Cathedral Gong. Silver Dial, Cast Sash Extra List Price $2 90

TAMBOUR No. 54—List Price $17 50
HEIGHT, 9½ inches WIDTH, 19 inches Mahogany Finish. DIAL, 6 inches, White, Struck Sash, Convex Glass
MOVEMENT, 8 Day Half-hour Strike, Cathedral Gong Silver Dial, Cast Sash Extra List Price... $2.90

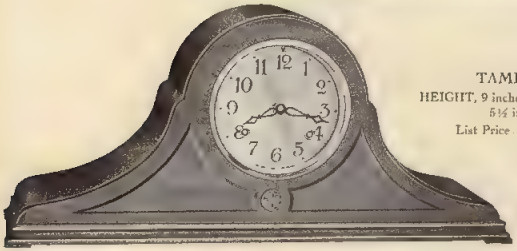
Prices Not Guaranteed

SOLID MAHOGANY TAMBOURS
FOUR POPULAR PRICED MODELS

Fitted With Our High Grade 8 Day
Pendulum Movement With Hour
and Half Hour Strike. Bronze Cast Sash.

TAMBOUR No. 19
HEIGHT, 8¼ inches WIDTH, 19¼ inches
5½ inch Silver Dial
List Price $36.25

TAMBOUR No. 20
HEIGHT, 9¼ inches WIDTH, 20½ inches
5¼ inch Silver Dial
List Price $36.25



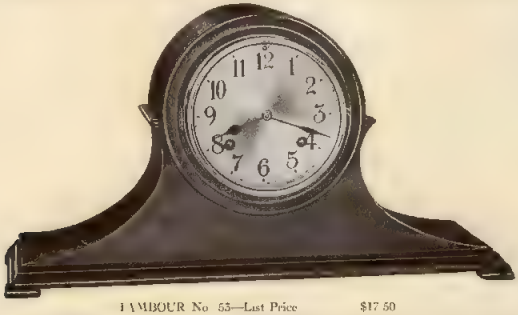
TAMBOUR No. 25
HEIGHT, 9 inches WIDTH, 20¼ inches
5¼ inch Silver Dial
List Price . . $36.25

TAMBOUR No. 24
HEIGHT, 9½ inches WIDTH, 20¼ inches
5½ inch Silver Dial
List Price $36.25

Prices Not Guaranteed

Mahogany Finished Tambours

TAMBOUR No. 52—List Price $18.90
HEIGHT, 9½ inches WIDTH 21 inches Mahogany Finish DIAL 6 inches, White, Struck Sash, Convex Glass
MOVEMENT, 8 Day Half-hour Strike, Cathedral Gong. Silver Dial, Cast Sash Extra List Price $2.90



TAMBOUR No. 53—List Price $17.50
HEIGHT, 10 inches WIDTH, 18½ inches Mahogany Finish DIAL 6 inches, White, Struck Sash, Convex Glass
MOVEMENT, 8 Day Half-hour Strike, Cathedral Gong Silver Dial Cast Sash Extra List Price $2.90

TAMBOUR No. 51—List Price . . .$16.00
HEIGHT, 9 inches WIDTH, 17¼ inches Mahogany Finish DIAL 6 inches, White, Struck Sash Convex Glass
MOVEMENT, 8 Day Half hour Strike, Cathedral Gong. Silver Dial, Cast Sash Extra List Price . $2.90

Prices Not Guaranteed

PHILADELPHIA

All "Philadelphia" mowers have set screw adjustment, the set screws being case-hardened and not stove bolt adjustment. The adjustable caps are split and not solid, so as to take up the wear in the journal bearing.

All dead knives are Vanadium crucible steel, and are screwed to the cast back with screws either round head or counter-sunk so that the dead knife can be easily removed. The cylinder knives are Vanadium crucible steel and are attached to the cylinder ends with two rivets made of the finest Norway iron. All the rollers are made of straight grained hard maple, and the roller pins are screwed, not driven, in the end. All the handles are made of straight grained white ash and the cross bar maple tongued and grooved and wedged. All rings and ends are made of finest malleable iron.

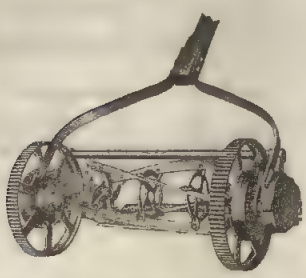
The large size mowers, 15-inch to 21-inch, have a special clip handle which gives great strength in the cross-bar when the machine is run on one wheel for cutting terraces or edge of borders.

All genuine "Philadelphia" lawn mowers have the name "PHILADELPHIA" cast and not stenciled on the wheels and side plates. The "Philadelphia" mowers are most simple in construction, which have made them popular, as there are so few wearing parts to get out of order.

The "Philadelphia" mowers, when they leave the factory, have been thoroughly inspected and are perfectly set and adjusted for use, and the knives are tested so they will cut paper from end to end.

There are no mowers in the world made of better material or finer workmanship than the genuine "Philadelphia," and they are fully guaranteed to give perfect satisfaction if directions are intelligently followed.

Graham.



All Steel; High Wheel.

Graham—No front rod. Train of gears on both sides. Removable box caps to take out cylinder for sharpening.

This mower is positively the best constructed and highest grade lawn mower manufactured, being the result of discriminating investigation on our part, made to meet the hardest and most severe work, and always giving the most perfect results.

Made of the finest quality steel throughout (including frame and wheels) and practically indestructible. Has very large and long bearings. The absence of a front girth or tie rod permits cutting of high standing grass. All bearings are bored for extreme accuracy with patented box caps for removing cylinder without disturbing frame or machine or adjustments. All blades made of **Vanadium crucible steel.** This mower is equipped with SELF-OILING OIL CUPS.

10-inch Wheels, 4 Blades, 6½-inch Reel.

Inches	17	19
Net weight, lbs.	47	49
Shipping weight, lbs.	77	79
Each	$34.00	$38.00

One in a box, handle separate.

Style "A."

All Steel; High Wheel.

Style "A"—Train of three gears on one side. Double ratchet.

This mower with the Graham all-steel is beyond criticism and is the same except that it has a front girth or tie rod, and train of gears on one side only, which operate a double ratchet on the opposite side. Either wheel will drive cylinder. That this mower has fully met all requirements and satisfied men "who know" is demonstrated by the fact that there are more style "A" all-steel mowers cutting grass in public and private parks, cemeteries and golf links throughout the world than all the other makes combined, because it does its work perfectly, and is practically indestructible. Equipped with self-oiling oil cups and **Vanadium crucible steel** blades.

10-inch Wheels, 4 Blades, 6½-inch Reel.

Inches	15	17	19	21
Net weight, lbs.	39	42	44	46
Shipping wt., lbs.	70	72	74	78
Each	$25.00	$28.00	$31.00	$34.00

One in a box, handle separate.

LAWN MOWERS
PHILADELPHIA

Style "E."

High Wheel.

Style "E"—Train of three gears on one side. Double ratchet. Removable box caps to take out cylinder for sharpening.

An exceptionally superior lawn mower made of the highest grade grey iron castings and built in the sturdiest manner to successfully meet heavy and hard work under all conditions. All bearings are bored for extreme accuracy and are 1⅛ inch in diameter and 1¾ and 2 inches long, thus giving unusually long wear. The box caps are removable so that cylinder can be taken out without disturbing frame or other adjustments. This mower is very popular among professional gardeners because of its many superior qualities. All blades are of **Vanadium crucible steel.** It is also equipped with self-oiling oil cups.

10-inch Wheels, 4 Blades, 6½-inch Reel.

Inches	15	17	19	21
Net weight, lbs..	46	49	51	53
Shipping wt., lbs.	74	76	81	82
Each	$25.00	$28.00	$31.00	$34.00

One in a box, handle separate.

Style "K."

High Wheel.

Style "K"—Single pinion. Geared both sides. Plain bearing.

Made to meet the demand for a perfect lawn mower giving the highest grade results. Bearings are 1¾ inches to 2¼ inches long and 1⅛ inch in diameter, bored for extreme accuracy. Operated by single pinion gears on each side. Made of highest grade grey iron castings. Unquestionably one of the most widely used mowers among professionals and laymen in the United States, and becoming more popular every year because of its wonderful qualities. All blades made of **Vanadium crucible steel.**

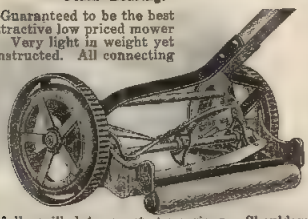
10-inch Wheels, 5 Blades, 6½-inch Reel.

Inches	14	16	18	20
Net weight, lbs..	40	42	44	46
Shipping wt., lbs.	63	66	72	75
Each	$20.00	$22.00	$24.00	$26.00

One in a box, handle separate.

Trojan

Plain Bearing.



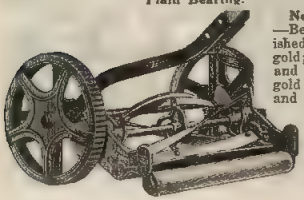
Trojan—Guaranteed to be the best and most attractive low priced mower ever made. Very light in weight yet strongly constructed. All connecting points carefully milled to exact dimensions. Shoulders are machined on each end of the cross rod to produce a rigid frame. Knives all crucible steel, thoroughly tempered. The reel is equipped with brass bushings and a lock-nut device for taking up wear. Screw adjusting Finish, gold bronze; decorations, green.

8-inch Wheels, 3 Knives, 5-inch Reel.

Inches	14	16	18
Weight, boxed, lbs.	41	44	46
Each	$8.00	$9.00	$10.00

New Imperial.

Plain Bearing.



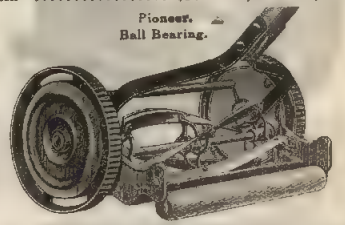
New Imperial—Beautifully finished in red and gold; red wheels and side plates, gold reel and bar and red cross rod; has steel shaft and adjustable brass bushings for taking up wear. Blades are of crucible steel, spiral formed and self sharpening. Cutting bar with screw adjustment. Varnished hardwood handles.

9-inch Wheels, 4 Knives, 5¼-inch Reel.

Inches	14	16	18
Weight, boxed, lbs.	45	48	51
Each	$10.50	$11.50	$12.00

Pioneer.

Ball Bearing.

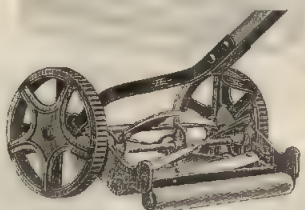


Pioneer B. B.—A strictly new and attractive design, finished in aluminum and gold. Highest grade ball bearings of cone steel, thoroughly hardened and ground, dust proof. Cutter bar new design, patent screw adjustments. Noiseless in operation and fully warranted. Varnished hardwood handle.

8-inch Wheels, 4 Knives, 5¼-inch Reel.

Inches	14	16	18
Weight, boxed, lbs.	42	45	48
Each	$11.00	$12.00	$13.00

Director, Ball Bearing.



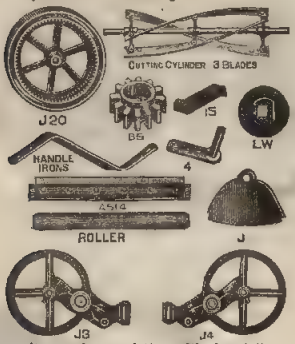
This mower is very graceful and one of the easiest-running machines on the market. The cutting knives are of highest grade crucible tool steel, spirally formed and self-sharpening. They are attached by means of malleable iron spiders to the shaft, which is made of cold-rolled machinery steel extending full length of reel. Stationary knife is screw adjusting, easy and positive in action. The ball bearings are best quality tool steel, tempered glass hard, and automatically adjust themselves. Mower is double-geared and parts are interchangeable. Gold bronze and red finish.

9-inch Wheels, 4 Knives, 5¼-inch Reel.

Inches	14	16	18
Weight, boxed, lbs.	50	52	54
Each	$20.00	$20.50	$21.00

IMPERIAL

Adjustable Brass Bearings—Three Blades.



Always give number or letter with description of parts wanted.

Always give size and name of machine.

If broken part is lost, give number of corresponding part and complete description.

The terms "right" and "left" are used with relation to the position of the operator when using mower.

		Weight, lbs.	Price
Drive wheel, No. J20, each		4 ½	$1.75
Right-side plate, No. J3 or J33, each		4	1.75
Left-side plate, No. J4 or J44, each		4	1.75
‡Reel, 3 blades, complete, all sizes (state size of mower, number of blades, and cutter bar number), express only each			4.00
Cutter bar, complete, with steel blade (state size wanted, give number appearing on the outer bar), each	A505 or B505	3 ½	2.00
	A510 or B510	3	2.00
	‡B512 or A512	3 ½	2.00
	B514 or A514	3 ¾	2.00
	B516 or A516	4	2.00
	B518 or A518	4 ¼	2.00
	‡B520 or A520	4 ½	2.00
‡Handle irons, both sides alike (state size of mower, and cutter bar number), per pair		3 ½	.60
Wood roller, all sizes (state size wanted and cutter bar number), each		2	.75

	Weight, oz.	Price
‡Wrench, each	7	$0.10
‡Wood handle, complete, each		2.00
Pinion, right B5, left B5, each	4	.35
Roller arms No. 4, both sides alike, each	4	.30
Wheel washers No. LW, both sides alike, each	1	.10
Pinion cap No. J, both sides alike, each	2	.20
Hardened steel pawls No. 15, both sides alike (state side plate number), each	1	.10
‡Cutter bar adjusting screws, each	1	.10
‡Cutter bar pivotal screws, each	1	.10
‡Machine screws, with lock nuts for reel bearing adjustment, each	1	.10
‡Roller arm bolts, each	1	.10
‡Pinion cap machine screws, with nuts, each	1	.10
‡Handle iron bolts, with nuts, each	2	.10
‡Handle grip joint bolt, with nut, each	2	.10
‡Wheel bolts, each	1	.10
‡Shrub rod nuts, each	1	.10
‡Bronze bearings, each	1	.10
‡Upper handle cap, each	2	.15
‡Lower handle cap, each	4	.30

After 1915 No. 5 J33 and J44 will be used for side plates and No. A514 for cutter bar.

Always give number or letter with description of parts wanted.

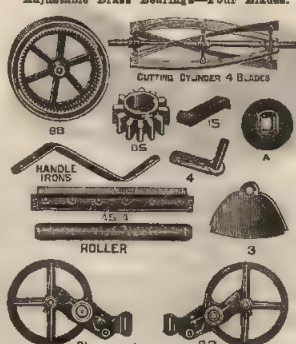
Always give size and name of machine.

If broken part is lost, give number of corresponding part and complete description.

The terms "right" and "left" are used with relation to the position of the operator when using mower.

NEW IMPERIAL

Adjustable Brass Bearings—Four Blades.



Always give number or letter with description of parts wanted.

Always give size and name of machine.

If broken part is lost, give number of corresponding part and complete description.

The terms "right" and "left" are used with relation to the position of the operator when using mower.

		Weight, lbs.	Price
Drive wheel no. 34-9B, each		5 ¾	$1.75
Right-side plate No. 31 or 311, each		4	1.75
Left-side plate No. 32 or 322, each		4 ½	1.75
‡Reel, 4 blades, complete, all sizes (state size of mower, number of blades, and cutter bar number), each, express only			5.50
Cutter bar, complete, with steel blade (state size wanted), give number appearing on the cutter bar, each	‡B512 or A512	3 ½	2.00
	B514 or A514	3 ¾	2.00
	B516 or A516	4	2.00
	B518 or A518	4 ¼	2.00
	‡B520 or A520	4 ½	2.00
‡Handle irons, both sides alike (state size of mower and cutter bar number), per pair		3 ½	.60
Wood roller, all sizes (state size wanted and cutter bar number), each		2	.75

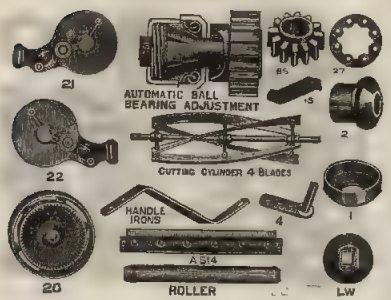
	Weight, oz.	Price
‡Wrench, each	7	$0.10
‡Wood handle, complete, each		2.00
Pinion, right B5, left B5, mail, each	4	.35
Roller arms No. 4, both sides alike, mail, each	4	.30
Wheel washers No. A, both sides alike, mail, each	1	.10
Pinion cap No. 3, both sides alike, mail, each	2	.20
Hardened steel pawls No. 15, both sides alike (state side plate number), mail, each	1	.10
‡Cutter bar adjusting screws, mail, each	1	.10
‡Cutter bar pivotal screws, mail, each	1	.10
‡Machine screws, with lock nuts for reel bearing adjustment, mail, each	1	.10
‡Pinion cap machine screws, with nuts, mail, each	1	.10
‡Set screws for fastening side plate to axle rod, mail, each	1	.10
‡Roller arm bolts, with nuts, mail, each	1	.10
‡Handle iron bolts, with nuts, mail, each	2	.10
‡Handle grip joint bolt, with nut, mail, each	2	.10
†Bronze bearings, mail, each	1	.10
‡Upper handle cap, mail, each	2	.15
‡Lower handle cap, mail, each	4	.30

Items marked thus ‡ not carried in stock. Shipped direct from factory.

Order parts by letter and number.

PIONEER, BALL BEARING.

Self-adjusting Ball Bearings—Four Blades.



Always give number or letter with description of parts wanted

Always give size and name of machine.

If broken part is lost, give number of corresponding part and complete description.

The terms "right" and "left" are used with relation to the position of the operator when using mower

		Weight, lbs.	Price
Drive wheel No. 20, each		4¾	$1.75
Right-side plate No. 21 or 211		4	2.25
Left-side plate No. 22 or 222		4	2.25
‡**Reel, 4 blades,** complete, all sizes (state size of mower, number of blades, and cutter bar number), each, express only			5.50
Cutter bar, complete with steel blade (state size wanted, give number appearing on the cutter bar), each	A508 or B508	2½	2.00
	A510 or B510	3	2.00
	‡B512 or A512	3½	2.00
	B514 or A514	3¾	2.00
	B516 or A516	4	2.00
	B518 or A518	4¼	2.00
	‡B520 or A520	4½	2.00
‡**Handle irons,** both sides alike (state size of mower and cutter bar number), per pair		3½	.60
Wood roller, all sizes (state size wanted and cutter bar number), each		2	.75
‡**Wood handle,** complete			2.00

	Weight, oz.	
‡**Wrench,** each	2	.10
Pinion, right B5, left B6, each	4	.35
Roller arms No. 4, both sides alike, each	4	.30
‡**Cones No. 2,** both sides alike, each	2	.60
Wheel washers No. LW, both sides alike, each	1	.10
Hardened steel pawls No. 15, both sides alike (state side plate number), each	1	.10
‡**Ball bearing case No. 1,** both sides alike, each	1	.50
‡**Ball retainer No. 27,** both sides alike, each	2	.60
‡**Cutter bar adjusting screws,** each	1	.10
‡**Cutter bar pivotal screws,** each	1	.10
‡**Roller arm bolts, with nuts,** each	1	10
‡**Handle iron bolts, with nuts,** each	2	.10
‡**Handle grip joint bolt, with nut,** each	2	.10
‡**Wheel bolts,** each	1	.10
‡**Shrub rod nuts,** each	1	10
‡**Upper handle cap,** each	2	.15
‡**Lower handle cap,** each	4	.30
‡**Springs for ball bearing device,** each	½	.30
‡**Metallic sleeve for ball bearing device,** each	½	.30

After 1915 sideplate numbers will be 211 and 222. Cutter bar will be A514.

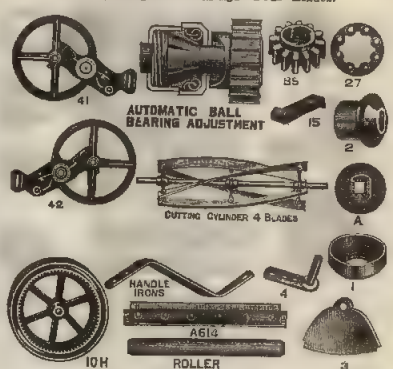
Items marked thus ‡ not carried in stock.

Shipped direct from factory

Order parts by **letter** and **number**

LAWN KING, BALL BEARING.

Self-adjusting Ball Bearings—Four Blades.



Always give number or letter with description of parts wanted

Always give size and name of machine.

If broken part is lost, give number of corresponding part and complete description.

The terms "right" and "left" are used with relation to the position of the operator when using mower

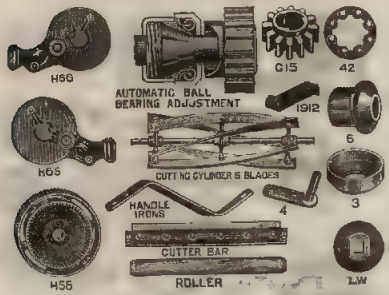
		Weight, lbs	Price
Drive wheel No. 34-10H, each		7	$2 25
Right-side plate No. 41 or 411, each		4½	2 25
Left-hand plate No. 42 or 422, each		4½	2.25
‡**Reel, 4 blades,** complete, all sizes (state size of mower, number of blades, and cutter bar number), express only			$5.50
Cutter bar, complete with steel blade (state size wanted; give number appearing cutter bar), each	‡B612 or A612	3½	2.00
	B614 or A614	3¾	2.00
	B616 or A616	4	2.00
	B618 or A618	4¼	2.00
	‡B620 or A620	4½	2.00
‡**Handle irons,** both sides alike (state size of mower, and cutter bar number), per pair		3½	.60
Wood roller, all sizes (state size wanted and cutter bar number), each		2	.75

	Weight, oz	
‡**Wrench,** each	2	.10
‡**Wood handle,** complete, express only, each		2 00
Pinion, right B5, left B6, each	4	.35
Roller arms No. 4, both sides alike, each	4	.30
‡**Cones No. 2,** both sides alike, each	2	.60
Wheel washers No. A, both sides alike, each	1	10
Pinion cap No. 3, both sides alike, each	2	.15
Hardened steel pawls No. 15, both sides alike (state side plate number), each	1	.10
‡**Ball bearing case No. 1,** both sides alike, each	1	.50
‡**Ball retainer No. 27,** both sides alike, each	2	60
‡**Cutter bar adjusting screws,** each	1	10
‡**Cutter bar pivotal screws,** each	1	10
‡**Roller arm bolts, with nuts,** each	1	.10
‡**Pinion cap machine screws, with nut,** each	1	.10
‡**Set screws for fastening side plate to axle rod,** each	1	.10
‡**Handle iron bolts, with nuts,** each	2	.10
‡**Handle grip joint bolt, with nut,** each	2	.10
‡**Upper handle cap,** each	2	.15
‡**Lower handle cap,** each	4	.30
‡**Springs for ball bearing device,** each	½	.30
‡**Metallic sleeve for ball bearing device,** each	½	.30

LAWN MOWER PARTS

NEW AMERICUS, BALL BEARING.

Self-adjusting Ball Bearings—Five Blades.



Always give number or letter with description of parts wanted.

Always give size and name of machine

If broken part is lost, give number of corresponding part and complete description.

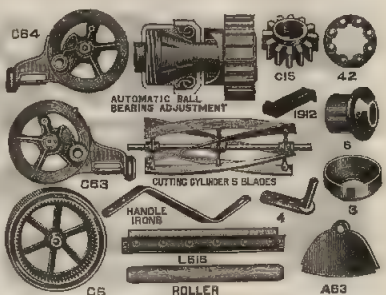
The terms "right" and "left" are used with relation to the position of the operator when using mower

		Weight, lbs	Price
Drive wheel No. H56-10, each		8¾	$2.25
Right-side plate No. H633 for 10 in. wheels and H655 for 11 in. wheels, each		4½	2.25
Left-side plate No. H644 for 10 in. wheels and H666 for 11 in. wheels, each		4½	2.25
‡**Reel, 5 blades,** complete, all sizes (state size of mower, number of blades, and cutter bar number), express only			7.50
Cutter bar, complete, with steel blade (state size wanted, give number appearing on cutter bar)	B614 or A614 B616 or A616 B618 or A618 ‡B620 or A620	3¾ 4 4¼ 4½	2.00 2.00 2.00 2.00
‡**Handle irons,** both sides alike (state size of mower and cutter bar number), per pair		3⅛	.60
Wood roller, all sizes (state size wanted and cutter bar number), each		2	.75

	Weight, Oz.	Price
‡**Wrench,** each	7	$0.10
‡**Wood handle,** complete, each		2 00
Pinion, right No. C15, left No. C16, mail, each	4	.35
Roller arms No. 4, both sides alike, mail, each	4	.30
‡**Cones No. 6,** both sides alike, mail, each	2	.60
Wheel washers No. LW, both sides alike, mail, each	1	.10
Hardened steel pawls No. 1912, both sides alike (state side plate number), mail, each	1	.10
‡**Ball bearing case No. 3,** both sides alike, mail, each	1	.50
‡**Ball retainer No. 42,** both sides alike, mail, each	2	.60
‡**Cutter bar adjusting screws,** mail, each	1	.10
‡**Cutter bar pivotal screws,** mail, each	1	.10
‡**Roller arm bolts,** mail, each	1	.10
‡**Handle iron bolts, with nuts,** mail, each	2	.10
‡**Handle grip joint bolt, with nut,** mail, each	2	.10
‡**Wheel bolts,** mail, each	1	.10
‡**Shrub rod nuts,** mail, each	1	.10
‡**Upper handle cap,** mail, each	3	.15
‡**Lower handle cap,** mail, each	4	.30
‡**Springs for ball bearing device,** mail, each	1	.30
‡**Metallic sleeve for ball bearing device,** mail, each	1	.30

CRESTLAWN BALL-BEARING.

Self-adjusting Ball Bearings. Interlocking Adjustments. Five Blades.



		Weight, lbs.	Price
Drive wheel No. C6-10, each		6	$3.00
Right-side plate No. C63		6¼	3.00
Left-side plate No. C64		6¼	3.00
‡**Reel, 5 blades,** complete, all sizes (State size of mower number of blades, and cutter bar number). Each, express only			7.50
Cutter bar, complete with lipped edge steel blade (state size wanted, give number appearing on the cutter bar)	‡L614 L616 L618 L620	4½ 5⅛ 5¾ 6⅜	3.00 3.00 3.00 3.00
‡**Handle irons,** both sides alike (state size of mower and cutter bar number), per pair		3⅛	.60
Wood roller, all sizes (state size wanted and cutter bar number), each		2	.75

	Weight, oz.	Price
‡**Wood handle,** complete	7	$0.00
‡**Wrench,** each	7	.35
‡**Steel wheel spindle,** complete, each	5	2.25
Pinion, right C15, left C16, each	4	.35
Roller arms No. 4, both sides alike each	4	.30
‡**Cones, No. 6,** both sides alike, each	2	.60
Pinion cap, No. A63, both sides alike, each	2	.20
Hardened steel pawls, No. 1912, both sides alike state side plate number), each	1	$0.10
‡**Ball bearing case No. 3,** both sides alike, each	1	.50
‡**Ball retainer No. 42,** both sides alike, each	2	.60
‡**Cutter bar adjusting bolts, with nuts,** each	1	.10
‡**Roller arm bolts, with nuts,** each	1	.10
‡**Handle iron bolts, with nuts,** each	2	.10
‡**Handle grip joint bolt, with nut,** each	2	.10
‡**Pin for cutter bar adjustment,** each	1	.10
‡**Stationary cone for wheel** (give number of wheel), each	1	.60
‡**Outside adjusting cone for wheel** (give number of wheel), each	2	.60
‡**Upper handle cap,** each	3	.15
‡**Lower handle cap,** each	4	.30
‡**Shrub rod nuts,** each	1	.10
‡**Cutter bar adjusting nuts,** each	1	.10
‡**Metallic sleeve for ball bearing device,** mail, each	1	.30
‡**Pins for ball bearing device,** each	1	.10
‡**Springs for ball bearing device,** each	1	.30
‡**Pinion cap machine screws, with nuts,** each	1	.10
‡**Steel wheel sleeve, complete,** each	3	2.00

Items marked thus ‡ not carried in stock
Shipped direct from factory.

Order parts by letter and number.

PYREX BAKING WARE

TEA POTS

Tall.

Nos.	Capacity, Cups	Weight, each, lbs.	Each
32	2	1⅝	$2.50
34	4	1¾	3.00
36	6	2¼	3.50

Round.

Nos.	Capacity, Cups	Weight each, lbs.	Each
12	2	1⅜	$2.50
14	4	1⅞	3.00
16	6	2⅛	3.50

Squat.

Nos.	Capacity, Cups	Weight each, lbs.	Each
26	6	2⅛	3.50
22	2	1⅝	$2.50
24	4	2⅞	3.00

All above, one in a carton.

PYREX TEA POT ASSORTMENTS

No. 12A—Contains one each Nos. 12, 16, 22, 26, 32 and 36 and two each Nos. 14, 24 and 34 Tea Pots; weight per assortment — lbs. Each.....$36.00

One assortment in a case.

GIFT SETS

Packed in Attractive Boxes.

This gift set will merrily ring up sales on your cash register at Christmas as well as many other times during the year, for it is suitable for weddings, anniversaries, birthday gifts, Easter, prizes, showers—in fact, any time when a gift of distinction is desired. It contains one 1½-quart round Casserole, one No. 322 Au Gratin dish, one No. 212 bread pan, one No. 202 pie plate, one No. 301 shirred egg dish, and six No. 432 ramekins.

No. 1216—Weight, per set, 13¼ lbs. Per set....$6.00

Engraved Pyrex.

No. 1216E—All pieces engraved, otherwise same as above. Weight, per set, 13½ lbs. Per set.....$10.00

BLUE RIBBON SETS

Packed in an attractive white box.

This is a very attractive and useful set and for those who do not want the larger sets, it meets with fine success.

There are only four pieces to the set but they will be found to be the most useful.

No. A Set—Consists of one No. 167 Round Casserole, one No. 212 Cake or Bread Baker, one No. 231 Utility Dish and one No. 203 Pie Plate. Weight, per set, 11⅞ pounds. Per set.....$5.00

One assortment in a box.

PYREX BAKING WARE

CASSEROLES

Oval.

No. 190—Capacity, 3 quarts; outside measurements, 10½x8x4½ inches; 14 pieces in a case. Weight, each, 4⅞ pounds. Each $3.00

One in a carton.

Oval.

Fit Standard Mountings.

Nos.	193	194	197
Capacity, qts.	1	2	1½
Out. meas., in.....8⅝x6¼x2⅞	9½x7x3⅝	8⅝x6¼x3⅝	
Pieces in case.....	30	21	24
Wt., each, lbs....	2½	3½	3
Each	$1.50	$2.00	$1.75

One in a carton.

Note—See page 1172¼ for Pyrex Casseroles and Receivers.

Round—Victor Cover.

Fit Standard Mountings.

Nos.	267	268
Capacity, quarts	1	1½
Outside measurements, inches.....	7¼x2⅝	8¼x2⅞
Pieces in case.....	30	24
Weight, each, lbs...	...	...
Each	$1.50	$1.75

Nos.	269	270
Capacity, quarts	2	2½
Outside measurements, inches....	9¼x3¼	9¾x3¼
Pieces in case.....	18	12
Weight, each, lbs.....	...	...
Each	$2.00	$2.50

Oval—Shallow—Victor Cover.

Fit Standard Mountings.

No.	283
Capacity, quarts	1
Outside measurements, inches.....	9x6½x2⅜
Pieces in case.....	30
Weight, each, lbs.	...
Each	$1.50

Nos.	284	285
Capacity, quarts	1½	2
Out. measurements, in. ...10⅝x7¾x2⅜		12x8¾x2½
Pieces in case.....	20	16
Weight, each, lbs.	...	...
Each	$1.75	$2.00

Oval—Deep—Victor Cover.

Fit Standard Mountings.

Nos.	293	297
Capacity, quarts	1	1½
Out. measurements, in....	8⅝x6¼x2⅞	8⅝x6¼x3⅝
Pieces in case.....	30	24
Weight, each, lbs.....	...	...
Each	$1.50	$1.75

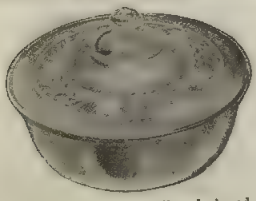
Nos.	294	290
Capacity, quarts	2	3
Out. measurements, in....	9½x7x3¾	10⅛x8x4½
Pieces in case.....	21	14
Weight, each, lbs.....	...	...
Each	$2.00	$3.00

Round—Shallow.

No. 220—Outside measurements, 9¾x1 inches; 42 pieces in a case. Weight, each, — lbs. Each.....$0.75

PYREX BAKING WARE

ENGRAVED CASSEROLES



Plain bottom with beautifully designed engraved cover.

Round.

Nos.	167CE5	168CE5	101CE5
Capacity, quarts	1	1½	2
Outside measurements, in.	7⅛x2⅝	8¼x2⅞	9x3¼
Pieces in case	30	24	18
Weight, each, lbs.	2½	3½	3⅝
Each	$2.40	$2.70	$3.00

One in a carton.

Oval.

Nos.	193CE5	194CE5	197CE5
Capacity, quarts	1	2	1½
Outside measurements, in.	8x6¼x2	9½x7x3¾	8x6¼x3
Pieces in case	30	21	24
Weight, each, lbs.	2½	3½	3
Each	$2.40	$3.00	$2.70

One in a carton.

PUDDING OR BAKING DISHES

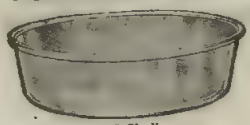
No. 120 Series.

Round.

Nos.	120	121
Capacity, qts.	2½	2
Outside measurements, in.	9¾x3½	9x3¼
Pieces in case	20	20
Weight, each, lbs.	2⅞	2¾
Each	$1.40	$1.20
Nos.	**122**	**123**
Capacity, qts.	1¾	1
Outside measurements, in.	8½x2⅞	7¼x2½
Pieces in case	30	36
Weight, each, lbs.	1⅞	1¾
Each	$1.00	$0.85

One in a carton.

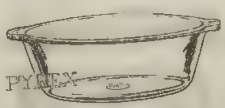
PUDDING DISHES



Round Shallow.

Nos.	132	155
Capacity, quarts	1	1½
Outside measurements, in.	7⅛x2¼	8⅛x2¼
Pieces in case	36	30
Weight, each, lbs.	2¼	2¼
Each	$0.85	$1.00

One in a carton.



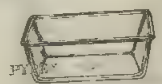
Deep with Handles—Round.

No. 450—Capacity, 1½ quarts; outside measurements, 8½x2⅞ inches; 30 pieces in a case. Weight, each, 2½ pounds. Each $1.25

One in a carton.

Round—Standard.

Nos.	463	464
Capacity, quarts	½	1
Outside measurements, in.	5⅞x2¼	7¼x2½
Pieces in case	60	36
Weight, each, lbs.	....	1⅝
Each	$0.60	$0.85
Nos.	**465**	**466**	**467**
Capacity, quarts	1¼	2	2½
Outside measurements, in.	8¼x2¾	9½x3	9⅞x3¼
Pieces in case	30	20	20
Wt., each, lbs.	1⅞	2⅝	....
Each	$1.00	$1.20	$1.40



Square.

No. 800-B—Capacity, 1½ quarts; outside measurements, 8¼x8 inches; 36 pieces in a case. Weight, each, 2¼ pounds. Each $1.25

One in a carton.

PYREX BAKING WARE

It has long been obvious that glass would be the ideal material for cooking utensils. No glass heretofore produced could withstand the sudden changes of temperature incident to baking. Pyrex is a development of applied science and experience covering forty years devoted to producing the highest grades of glass for technical service. Pyrex glass shows by actual test a heat conductivity 50 per cent higher than ordinary glass and nearly twice as high as earthenware of corresponding thickness. Glass is acknowledged to be the most sanitary material for any utensil requiring constant cleaning, and shows the slightest trace of dirt plainly. Does not absorb odors or flavors; does not craze nor flake, a serious objection to all enameled, or earthenware. Affords more thorough cooking, more uniform results, and almost impossible to burn food cooked in the glass. Pyrex is made by the Corning Glass Works, the largest glass manufacturing plant in the United States. It supplies the railroads of the country with all the glass used for semaphore lenses, headlights, lanterns, etc., and 99 per cent of the thermometer glass used in the United States.

CASSEROLES

Round.

Nos.	100	101
Capacity, quarts	2½	2
Outside measurements, in.	9¾x3½	9x3¼
Pieces in case	12	18
Weight, each, lbs.	4½	3⅞
Each	$2.50	$2.00

Nos.	102	103	104
Capacity, quarts	1½	1	½
Outside measurements, in.	8¼x2⅞	7¼x2½	6⅛x2¼
Pieces in case	24	30	48
Weight, each, lbs.	3⅝	2½	1⅞
Each	$1.75	$1.50	$1.00

Round.
Fit Standard Mountings.

Nos.	164	167
Capacity, quarts	2	1
Outside measurements, in.	4¼x2	7¼x2⅝
Weight, each, lbs.	1⅛	2⅛
Pieces in case	84	30
Each	$0.70	$1.50

Nos.	168	170
Capacity, quarts	1½	2½
Outside measurements, in.	8¼x2⅞	9¼x3¼
Pieces in case	24	12
Weight, each, lbs.	3½	4¾
Each	$1.75	$2.00

Round, Shallow.

No. 112—Capacity 1 quart; outside measurements, 7⅝x2¼ inches; 30 pieces in a case. Weight, each, 2¾ pounds. Each $1.50

No. 113—Capacity, 1½ quarts; outside measurements, 8¼x2¼ inches; 24 pieces in a case. Weight, each, 2½ pounds. Each $1.75

Oval, Shallow—(Beefsteak).
Fit Standard Mountings.

Nos.	183	184
Capacity, quarts	1	1½
Outside measurements, in.	9x6½x2⅝	10⅝x7¾x2⅝
Pieces in case	30	20
Weight, each, lbs.	2¾	4
Each	$1.50	$1.75

Square.

No. 800—Capacity, 1½ quarts; outside measurements, 8¼x3 inches; 30 pieces in a case. Weight, each, 3⅝ pounds. Each $2.25

Oval, Shallow (Beefsteak).

No. 185—Capacity, 2 quarts; outside measurements, 12x8¾x2½ in.; 16 pieces in a case. Wt., each, 5 pounds. Each $2.00

All above, packed one in a carton.

FISH OR MEAT PLATTERS

Oval.

No. 313—Outside measurements; 13¾x8¾x1¼ inches; 30 pieces in a case. Weight, each, 2½ lbs. Each..$1.50
No. 315—Outside measurements, 15¾x10¼x1¼ inches; 21 pieces in a case. Weight, each, 3⅞ lbs. Each..$2.00
One in a carton.

BISCUIT PANS

Oblong.

No. 234—Outside measurements, 9⅛x7⅝x1¼ inches; 48 pieces in a case. Weight, each, 2 lbs. Each...$0.85
No. 235—Outside measurements, 11⅛x8⅝x1¼ inches; 36 pieces in a case. Weight, each, 2⅝ lbs. Each..$1.25
One in a carton.

CAKE DISHES

Square.

No. 809—Outside measurements, 9⅛x1½ inches; 36 pieces in a case. Weight, each, 2⅛ lbs. Each....$1.00
No. 810—Outside measurements, 10⅛x1½ inches; 28 pieces in a case. Weight, each, 3⅜ lbs. Each....$1.50
One in a carton.

Round.

No. 221—Outside measurements, 9⅛x1⅝ inches; 48 pieces in a case. Weight, per carton, 5½ lbs. Each..$0.75
Three in a carton.

PIE PLATES

Round, Wide Rim.

Nos.	202	203
Outside measurements, inches.....	8⅝x1⅝	9⅝x1¼
Pieces in case.....	72	57
Weight, per carton, lbs.....	4½	5⅝
Each	$0.75	$0.90

Three in a carton.

Round—Wide Rim.

No. 206—Outside measurements, 6½x1⅝ inches; 72 pieces in a case. Weight, each, 14 ounces. Each..$0.50
No. 207—Outside measurements, 7½x1¾ inches; 54 pieces in a case. Weight, each, 1⅛ lbs. Each....$0.60
No. 208—Outside measurements, 8½x1⅝ inches; 48 pieces in a case. Weight, each, 1⅜ lbs. Each....$0.75
One in a carton.

No. 209 (201)—Outside measurements, 9⅝x1½ inches; 60 pieces in a case. Weight, per carton, 6 lbs. Each $0.90
Three in a carton.

No. 210—Outside measurements, 10½x1½ inches; 30 pieces in a case Weight, each, 2⅞ lbs. Each....$1.00
No. 211—Outside measurements, 11½x1½ inches; 24 pieces in a case. Weight, each, 3 lbs. Each.....$1.10
One in a carton.

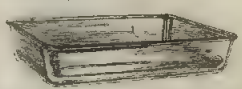
Six Sided.

No. 1203—Outside measurements, 9⅝x1¼ inches; 57 pieces in a case. Weight, per carton, 6⅞ lbs. Each.$1.00
Three in a carton.

UTILITY PANS

Oblong.

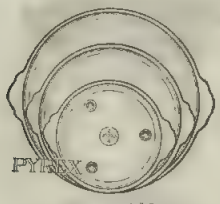
No. 231 — Outside measurements, 10½ x6½x2 inches; 30 pieces in case. Wt., each, 2¾ pounds. Each $1.00



No. 232—Outside measurements, 12⅝x8¾x2 inches; 21 pieces in a case. Weight, each, 3½ lbs. Each....$1.75
One in a carton.

PYREX BAKING WARE

TILES OR TRAYS



Nos.	706	708	710
Outside measurements, in.	7x⅝	9x¾	11x⅝
Pieces in case	60	40	48
Weight, each, lbs.	1	1¼	1½
Each	$0.50	$0.75	$1.00

One in a carton.

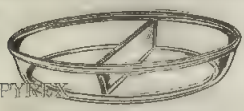
OVAL DISHES

With Handles.

No. 322 — Outside measurements, 10x6½x1½ inches; 90 pieces in a case. Wt., per carton, 7½ lbs. Each $0.85

Six in a carton.

VEGETABLE DISHES

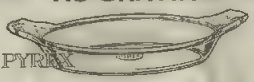


Double Compartment—Round.

No. 130—Outside measurements, 9¾x1⅞ inches; 24 pieces in a case. Weight, each, 2⅝ lbs. Each....$1.50

One in a carton.

AU GRATIN



French Pattern.

No.	330
Outside measurements, in.	10⅛x5¼x1⅜
Pieces in case	54
Weight, each, lbs.	1¼
Each	$0.85

Nos.	331	332
Outside measurements, in.	11¼x5⅜x1½	12¼x6½x1½
Pieces in case	40	30
Weight, each, lbs.	1½	1⅝
Each	$1.00	$1.25

One in a carton.

ROUND DISHES

With Handles.

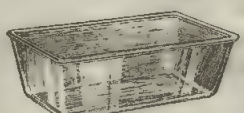
No. 301 — Outside measurements, 8½x1½ inches; 108 pieces in a case. Weight, per carton, 6⅞ lbs. Each...$0.75

No. 302 — Outside measurements, 6⅞x1⅜ inches; 216 pieces in a case. Weight, per carton, 4 lbs Each.....$0.55

Six in a carton.

BREAD PANS

Oblong.



No. 212 — Outside measurements, 9⅛x5⅛x2⅞ inches; 36 pieces in a case. Weight, each, 2⅞ lbs. Each...$0.90

No. 214—Outside measurements, 10⅝x5⅝x3⅜ inches; 24 pieces in a case. Weight, each, 2⅝ pounds. Each $1.50

One in a carton.

BAKING DISHES

Round, Small.

Nos.	452	453	455
Capacity, ounces	6	8	12
Outside measurements, in.	4¼x1⅝	4½x1⅝	4¾x1⅞
Pieces in case	330	216	144
Wt., per carton, lbs.	2¼	2⅝	3⅞
Each	$0.25	$0.30	$0.40

Six in a carton.

PYREX BAKING WARE

PUDDING DISHES

OPEN PUDDING DISHES

Oblong.

No. 145—Outside measurements, 7¾x5¾x2 inches; 60 pieces in a case. Weight, each, 1¾ lbs. Each.... $0.85

One in a carton.

BAKING DISHES

Round, Shallow.

No. 135—Capacity, 1 quart; outside measurements, 8¾x1¾ inches; 42 pieces in a case. Weight, each, 1⅝ pounds. Each $1.00

One in a carton.

Oval.

Nos.	400	401
Capacity, oz.	9	10
Outside measurements, in.	6¼x4½x1⅝	6⅝x4⅞x1½
Pieces in case	216	192
Wt., per carton, lbs.	8⅜	8½
Each	$0.40	$0.45
Nos.	**402**	**403**
Capacity, oz.	12½	18¼
Outside measurements, in.	7¼x5¼x1½	8½x6x1⅝
Pieces in case	168	108
Wt., per carton, lbs.	4½	6½
Each	$0.55	$0.60

Six in a carton.

COVERED BAKING DISHES

Two-Piece—Oval.

No. 110—Outside measurements, 10x7⅝x2⅞ inches; 24 pieces in a case. Weight, each, 3⅞ lbs. Each....$2.00

One in a carton.

PYREX BAKING WARE

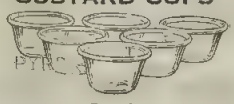
BEAN POTS

Round.

Nos.	502	504	506
Capacity, quarts	½	1	2
Outside measurements, in.	5⅜x3¼	6¾x4½	7¼x5⅝
Pieces in case	60	33	18
Weight, each, lbs.	1⅛	2½	4¼
Each	$1.00	$1.75	$2.50

One in a carton.

CUSTARD CUPS



Round.

Nos.	422	423
Capacity, ounces	6	4
Outside measurements, in.	4x2¼	3½x2
Pieces in case	168	216
Weight, per carton, lbs.	2⅞	2
Each	$0.25	$0.20

Six in a carton.

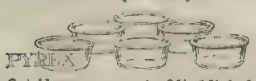
Round—French Pattern.

Nos.	424	426
Capacity, ounces	4	6
Outside measurements, in.	3⅛x2⅝	3⅝x2⅝
Pieces in case	216	180
Weight, per carton, lbs.	2¼	2⅝
Each	$0.20	$0.25

Six in a carton.

INDIVIDUAL BAKERS

Round—(Ramekin).



No. 432—Outside measurements, 3⅛x1⅝ inches; capacity, 3 ½ounces; 360 pieces in a case. Weight, per carton, 1⅝ pounds. Each.....$0.15

Six in a carton.

INDIVIDUAL BAKERS

(Ramekin)—Round Wide Rim.

No. 442—Outside measurements, 3¾x1½ inches; capacity, 4 ounces; 240 pieces in case. Weight, per carton, 2⅛ pounds. Each.....$0.20

Six in a carton.

PERCOLATOR TOPS

Pyrex Style.

No. 953 — For "Universal" and "Royal Rochester" style coffee percolators. Diameter 2⅛ inches; height 1⅛ inches; 576 pieces in a case. Weight, per carton, 4⅝ pounds. Each.....$0.15

Two dozen in a carton.

HOUSEHOLD SETS

Each set contains 14 pieces as follows:

1—**No. 268** 1½ qt. Round Casserole, with Victor Cover
1—**No. 231** 10½x6½x2 in. Oblong Utility Dish
1—**No. 135** 1 qt. Round Pudding or Baking Dish
1—**No. 466** 2 qt. Round Pudding or Baking Dish
1—**No. 212** 9⅛x5⅛x2⅛ in. Oblong Bread Pan
2—**No. 209** 9½ in. Pie Plate, Wide Rim
1—**No. 234** 9⅛x7⅝x1¼ in. Oblong Biscuit Pan
6—**No. 426** 6 oz. Round Custard Cups, French Pattern

No. 10—Six sets in a case; 14 pieces in each set. Weight, per set, 26 pounds. Per set.....$10.00

Packed in attractive white box.

PYREX 5-PIECE GIFT SETS

Nos.	Pieces	Set in Case	List Price per Set
5	5	12	$5.00
5E2 Engraved	5	12	8.00

Each set contains:

1—No. 284 1½ qt. Oval Beefsteak Casserole with Victor Cover

1—No. 212 9⅛x5⅛x2⅜ in. Oblong Bread Pan

1—No. 208 8½ in. Pie Plate, Wide Rim

1—No. 234 9⅛x7⅝x1¾ in. Oblong Biscuit Pan

1—No. 145 7⅝x5⅝x2 in. Oblong Baking Dish

The engraved Gift Set, containing the same pieces is attractively engraved in the distinctive Spray (E2) design.

Weight per set 14 pounds.

Packed in attractive gift box.

WHITE PYREX DISHES, ETC.

No. 167W—1 qt. Round Casserole. Each.....$3.00
No. 168W—1½ qt. Round Casserole. Each..... 3.50
No. 169W—2 qt. Round Casserole. Each..... 4.00
No. 183W—1 qt. Oval, Shallow Casserole. Each 3.00
No. 184W—1½ qt. Oval, Shallow Casserole. Each 3.50
No. 185W—2 qt. Oval, Shallow Casserole. Each 4.00
No. 193W—1 qt. Oval, Deep Casserole. Each.. 3.00
No. 197W—1½ qt. Oval, Deep Casserole. Each.. 3.50
No. 194W—2 qt. Oval, Deep Casserole. Each.. 4.00
No. 209W 9½ in. Pie Plate. Each..... 1.75
No. 313W—13¾ in. Fish Platter. Each..... 8.00
No. 135W—1 qt. Baking Dish. Each..... 2.00

Each article in a carton.

PYREX NURSING BOTTLES

Pyrex Nursing Bottles are the result of an almost universal demand from mothers for a nursing bottle made of the same material as the famous Pyrex transparent Oven Dishes—to withstand extremes of both heat and cold. Every mother who has broken baby's last nursing bottle knows the need of dependable bottles that can be boiled, or taken from the ice box and warmed without fear of breaking. Neither heat nor cold will break Pyrex Nursing Bottles. Pyrex Nursing Bottles are easy to clean, and they are 100% safe for the reason that they are 100% clean.

Every baby deserves a full set of at least six bottles, sufficient for a day's use. In the morning prepare the formula for the day, fill the bottles, close them with a tuft or absorbent cotton, put them in an ice box, and warm when baby's appetite calls.

No. 100 Gift Set contains 6 bottles as follows: 1—4 oz. narrow neck, 4—6 oz. narrow neck. Six sets to case. Wt., per case, approximately 18 pounds. Weight, per set, 2½ lbs. Packed in attractive carton for window display. The thoughtful gift for the baby.

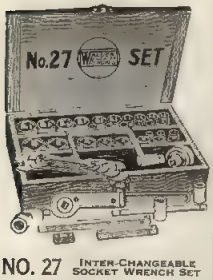
No. 150 Gift Set contains six 8-ounce wide mouth bottles packed in attractive carton for window display. Every mother will appreciate the economy of the six bottle set. Nothing is too good for the baby. These sets will sell themselves.

Bottles are made in three shapes, namely: Wide neck, narrow neck and flat shape.

No. 6W— 6 oz. size, wide mouth. Each.....$0.20
No. 6W 8 oz. size, wide mouth. Each..... .25
No. 6W—10 oz. size, wide mouth. Each..... .30
No 4N 4 oz. size, narrow mouth. Each..... .10
No. 6N— 6 oz. size, narrow mouth. Each..... .20
No. 8N 8 oz. size, narrow mouth. Each..... 25
No. 10N 10 oz. size, narrow mouth. Each..... .30
No. 6F— 6 oz. size, flat shape. Each..... .20
No. 8F 8 oz. size, flat shape. Each..... .25
No. 10F—10 oz. size, flat shape. Each..... .30
No. 1—Assortment of 36 bottles. Per assortment 9 00
No. 100—Gift set as illustrated..... 1.00
No. 150—Gift set as illustrated..... 1.50

WALDEN-WORCESTER WRENCHES

INTER-CHANGEABLE SOCKET WRENCH SETS

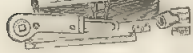


NO. 27 INTER-CHANGEABLE SOCKET WRENCH SET

A complete, heavy duty socket wrench set for use by mechanics or millwrights in service station, garage or general factory and mill service.

No. 716—12" Ratchet Wrench.
No. 1135— 5" Extension Bar.
No. 1136— 9" Extension Bar.
No. 1105—Combination T and Offset Handle.
No. 1102—Universal Joint.
No. 1107—Brace Wrench.
No. 1108—Brace Top.
No. 1109 Plug Connectors (two).
No. 1110 Socket Connector.
16 Hex. Sockets—7/16, 1/2, 9/16, 19/32, 5/8, 11/16, 3/4, 25/32, 13/16, 7/8, 15/16, 31/32, 1, 1-1/16, 1 1/8, 1-1/4
11 Square Sockets 3/8 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 7/8, 1, 1-1/8, 1-1/4
5 Open End Wrenches.

Price complete..... $27.00
Box size 16 x 10 x 2-7/8. Weight 25.00 lbs.



NO. 8 INTER-CHANGEABLE SOCKET WRENCH SET

Assortment particularly selected to fit Ford cars.

No. 516—9" Ratchet Wrench
No. 1139—9" Extension Bar.
No. 1102—Universal Joint.
No. 1109—Plug Connections (two)
7 Sockets—Hexagonal 1/2, 9/16, 5/8, 11/16, 3/4, 7/8, 15/16
1 Socket Square 9/16

Price complete.. .... $10.00
Box size 10-7/16 x 4 x 2-5/8. Weight 7.00 lbs.

INTERCHANGEABLE STEEL SOCKETS

Sockets—Sockets are machine made from the solid bar. Broaching depth is the thickness of the nut to be fitted, and broached 1/64" over the size of the nut. Sockets are counter drilled making extreme bolt size depth of socket 1/2" more than the thickness of the nut. The outside diameter of the socket size and taper have been designed to insure strength and service conditions. The broached end is countersunk slightly to relieve the square edges and to allow more rapid placing of socket on bolt head. All sockets are heat treated to toughen them.

SOCKET STOCK NUMBERS		SOCKET SIZES	SIZES of SCREW-BOLT-NUTS				
			S.A.E.		U.S. STAN.		
SQUARE	HEXAGONAL		NUTS CAP SCREWS		NUTS CAP SCREWS		U.S. BOLT HEADS STAN. UNFINISHED
112		3/8					
114	214	7/16	1/4			1/4	
116	216	1/2	5/16	1/4		5/16	1/4
118	218	9/16	3/8		3/8		
	219	19/32		5/16		3/8	5/16
120	220	5/8	7/16		7/16		
122	222	11/16	1/2	3/8	1/2	7/16	3/8
124	224	3/4	1/2		1/2		
	225	25/32		7/16			7/16
	226	13/16				5/8	
128	228	7/8	9/16	1/2	5/8	1/2	1/2
	230	15/16	5/8				
	231	31/32		9/16		5/8	9/16
132	232	1	11/16	5/8	3/4		
	234	1 1/16	3/4				5/8
136	236	1 1/8		3/4	7/8		
140	240	1 1/4	7/8		1		3/4

NO. 26 INTER-CHANGEABLE SOCKET WRENCH SET

This set is similar in every respect to the No. 27 Set except that it does not contain the series of square sockets. It is especially well adapted for use in service stations, garages and repair shops, on all classes of automotive work.

No. 716—12" Ratchet Wrench.
No 1135— 5" Extension Bar.
No 1136— 9" Extension Bar.
No. 1105—Combination T and Offset Handle
No. 1102—Universal Joint.
No. 1107—Brace Wrench.
No. 1108—Brace Top.
No. 1109—Plug Connectors (two).
No. 1110—Socket Connector
16 Hex Sockets—7 16, 1/2, 9/16, 19/32, 5/8, 11, 16, 3 4, 25/32, 13/16, 7/8, 15/16, 31 32, 1, 1-1/16, 1-1/8, 1-1/4.
5 Open End Wrenches.

Price complete. $21.00
Box size 16 x 10-1/2 x 2-7/8 Weight 19 25 lbs.

NO. 16 INTER-CHANGEABLE SOCKET WRENCH SET

A set of a rabbit screw wrench set for owners, and for garages where the purchase of the larger No. 27 set would not be warranted.

No. 516—9" Ratchet Wrench.
No 1139— 9" Extension Bar
No. 1102—Universal Joint
No 1109—Plug Connectors (two)
16 Sockets—Hexagonal 7 16, 1 2, 9 16, 19/32, 5/8, 11/16, 3 4, 25 32 13 16, 7/8, 15/16, 31, 32, 1, 1-1/16, 1-1/8, 1-1/4

Price complete..... $14.50
Box size 12 x 8-1/4 x 2-5/8. Weight 11.00 lbs

ANY WRENCH OR SOCKET MAY BE OBTAINED SEPARATELY

No.	100	Open End Wrenches (set)	$1 50	No.	1108	Brace Top	.60
No.	516	Ratchet Wrench	2 75	No.	1109	Plug Connector	.45
No.	716	Ratchet Wrench	3.60	No.	1110	Socket Connector	.45
No.	1102	Universal Joint	1 .,	No.	1135	5" Extension Bar	.50
No.	1105	Comb. T and Offset Handle	.60	No.	1136	9" Extension Bar	.60
No.	1107	Brace Wrench	1 20	No.	1178	Brace Wrench	1 80

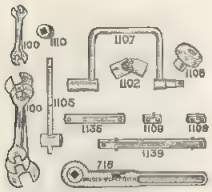
STEEL SOCKETS

		$0.40	136—140	$0.80
60	112-118	.40	136—140	$0.80
45	120	.45	214—222	.40
45	122	.50	224—228	.45
50	124	.55	226—230	.50
60	128	.65	231—232	.60
1 80	132	.75	234—240	.65

Prices Quoted on this Page are Manufacturer's Lists, Subject to Special Discounts.

WALDEN-WORCESTER WRENCHES

INTER-CHANGEABLE SOCKET WRENCH PARTS



RATCHET WRENCHES—½" square opening 9" and 12" lengths. The special type of pawl reduces tension in backing up wrench also gives maximum strength and always positive smooth action. The ratchet action is reversed by turning over the wrench eliminating complicated reversing mechanism which also would reduce strength and positive action of the tool—only three working parts which are made of high grade steel and properly tempered.

516—9 inch — Each 2.75
716—12 inch — Each 3.30

Socket Stock Numbers		Socket Sizes	Screw Bolt Nuts S.A.E.	Screw Bolt Nuts U.S. Coarse Screws	Screw Bolt Nuts U.S. Bolt Heads U.S. Nuts
Square	Hexagon				
112		5/8			
114	214	7/16	1/4		
116	216	1/2	9/32	1/4	1/4
118	218	9/16	5/16	5/16	5/16
	219	19/32	11/32	11/32	11/32
120	220	5/8	3/8	3/8	3/8
122	222	11/16	7/16	7/16	7/16
124	224	3/4	1/2	1/2	1/2
	225	25/32	9/16	9/16	9/16
	226	13/16	5/8	5/8	5/8
128	228	7/8	11/16	11/16	11/16
	230	15/16	3/4	3/4	3/4
	231	31/32	13/16	13/16	13/16
132	232	1	7/8	7/8	7/8
	234	1 1/16	15/16	15/16	15/16
136	236	1 1/8	1	1	1
140	240	1 1/4	1 1/8	1 1/8	1 1/8

HEAVY DUTY WRENCHES

Popular types of wrench handles with interchangeable sockets are many times the desirable wrench equipment.

Recognizing this demand and also the necessity for heavier style of tools the following numbers are stock items.

These handles are usable with all interchangeable parts in our regular sets and sockets, our series Nos. 100 and 200.

BRACE SOCKET WRENCH

Shank 3-1/2". Length over all 12". Wire 5/8". Sweep 12". Throw 6".

No. 1114 — Each 1.40

OFFSET HANDLE WRENCH

Length over all 12". Wire 11/16".

No. 1125 — Each .80

BRACE SOCKET WRENCH

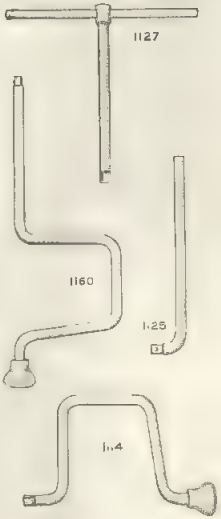
Long Shank 10-1/2". Length over all 20". Wire 5/8". Sweep 12". Throw 6". A considerably heavier speed wrench than our 6000 series. Extra sweep allows more leverage for use with large size sockets.

No. 1160 — Each 1.65

TEE HANDLE WRENCH

Shank 10-1/2" x 11/16". Handle 12" x 1/2". Handle is adjustable to make L. type.

No. 1127 — Each 1.40



1102 **Universal Joints** are solid steel full machined finish used in combination with ratchet wrench extension bars and sockets working successfully at 45 degree angle.

Each 1.80

1107 **Brace Wrench.** Length over all 9¾", sweep 10". For use with various sockets and combination parts. Ends of brace are provided with ball friction to hold parts in engagement.

Each 1.20

1108 **Brace Top** a pressed steel handle, working on cone bearing and provided with socket end to fit brace wrench and various combination parts. Valuable auxiliary with extension bar ratchet wrench and socket on overhead work—millwrights particularly will appreciate this attachment and combination.

Each .60

1178 **Brace Wrench with Top Handle.** When ordering complete tool please use this number—1178.

Each 1.80

1135-1139 **Extension Bars also Shanks** for Combination Tee and offset handle No. 1105. Bars have ball friction on either end to retain sockets and other parts in engagement.

1135—5" — Each .50
1139 9" — Each .60

SOCKET PRICES

112-118	$0.40	136-140	$0.80
120	.45	214-222	.40
122	.50	224-225	.45
124	.55	226-230	.50
128	.65	231-232	.60
132	.75	234-240	.65

Sockets. Sockets are machine made from the solid bar. Broaching depth is the thickness of the nut to be fitted, and broached 1/64" over the size of the nut. Sockets are counter drilled making extreme bolt size depth of socket ½" more than the thickness of the nut. The outside diameter of the socket size and taper have been designed to insure strength and service conditions. The broached end is countersunk slightly to relieve the square edges and to allow more rapid placing of socket on bolt head. All sockets are heat treated to toughen them.

1104 **Combination Tee and Offset Handle Wrench** with extension. The shank or extension bar (1135) is removable. The ball friction on both ends to couple combination parts or sockets.

Each 1.10

1105 **Combination Tee and Offset Handle.** This number covers the handle only as illustrated. If complete tool is wanted, order No. 1104.

Each .60

1109 **Plug Connector.** Square bar connector, with ball friction on each end for coupling combination parts.

Each .35

1110 **Socket Connector.** Round socket with ¼" square hole for coupling combination parts.

Each .35

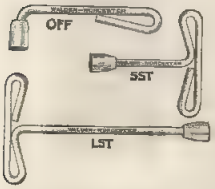
Prices Quoted on this Page are Manufacturer's Lists, Subject to Special Discounts.

WALDEN-WORCESTER WRENCHES

UNIVERSAL JOINT TEE HANDLE WRENCHES

1016-1/2"	Each 2.50
1018-9/16"	Each 2.50
1020-5/8"	Each 2.50
1022-11/16"	Each 2.50
1024-3/4"	Each 2.50
1028-7/8"	Each 2.50

TEE AND OFFSET HANDLE SOCKET WRENCHES



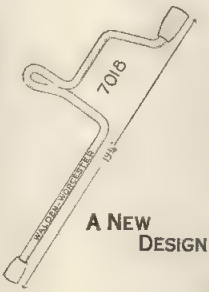
SIZE	OFF	SST	LST
3/16	2514	2614	2714
1/4	2516	2616	2716
9/16	2518	2618	2718
19/32	2519	2619	2719
5/8	2520	2620	2720
11/16	2522	2622	2722
3/4	2524	2624	2724
25/32	2525	2625	2725
13/16	2526	2626	2726
7/8	2528	2628	2728

Offset Socket Wrenches. Handles 7", 10 sizes as listed.
No. 2500 Series. All Sizes Each .55

Short Shank Tee Handle Wrenches. Handle 6 inches, Shank 6 inches, 10 sizes as listed.
No. 2600 Series. All Sizes Each .60

Long Shank Tee Handle Wrenches. Handle 6 inches, Shank 12 inches, 10 sizes as listed.
No. 2700 Series. All Sizes Each .65

DOUBLE-POWER SPEED WRENCHES



A NEW DESIGN

More Power—More Speed

Less Hand Travel—More Leverage

An entirely new design in speed wrenches. The lesser throw gives more speed (less hand travel). The loop on handle is the grip for extra leverage in releasing and final tightening. An offset wrench is many times necessary using ordinary type of speed wrench but this Double-Power Speed wrench will prove sufficient.

No.	Size	No.	Size
7014	7/16"	7022	11/16"
7016	1/2"	7024	3/4"
7018	9/16"	7025	25/32"
7019	19/32"	7026	13/16"
7020	5/8"	7028	7/8"

7000 Series ALL SIZES EACH **1.00**

SPEED WRENCHES

6000 SERIES

Shank 11-1/4".
Length over all 19-1/4".

6000 Series ALL SIZES EACH **.95**

Are used as speed tools in assembling and dismantling cars. Are most efficient when used on a series of the same sized nuts as on cy inder heads. These tools are big time savers.

No.	Size	No.	Size
6014	7/16"	6022	11/16"
6016	1/2"	6024	3/4"
6018	9/16"	6025	25/32"
6019	19/32"	6026	13/16"
6020	5/8"	6028	7/8"

NUT AND BOLT SPEED WRENCHES

6316 1/2" Each 3.00
6318-9/16" Each 3.00

A one man tool. The extension socket holds either the nut or bolt head while the operator spins it off. Extension arm is adjustable for different bolt lengths.

STEEL OPEN END WRENCHES

Thin stamped wrenches are most useful in many places. Special steel used to give strength and wearing qualities. Sizes are 1" x 7/8, 1 1/4 x 5/8, 1/2 x 9/16, 3/8 x 7/16, 1/4 x 5/16.

No. 100 Set (6 wrenches) **1.50**
(Sold in sets only)

Prices Quoted on this Page are Manufacturer's Lists, Subject to Special Discounts.

WALDEN-WORCESTER WRENCHES

BRACE SOCKET WRENCHES FOR DEMOUNTABLE RIMS AND DISC WHEELS

1500 SERIES

The loop on the handle is the grip for extra leverage in releasing and final tightening. The lesser throw on the brace gives more speed on account of lesser hand travel. It combines advantages of our offset and speed wrenches. The shank on this wrench is five inches long providing extra clearance for use on practically all disc wheels.

A desirable wrench for other uses than tires and wheels in garage service.

Stock No.	Size	Stock No.	Size
1520	⅝	1522	11/16
1524	¾	1528	7/8

Each, All Sizes $1.10

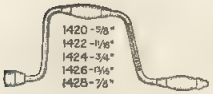
A NEW DESIGN

MORE POWER—MORE SPEED
GREATER LEVERAGE
LESS HAND TRAVEL

BRACE SOCKET WRENCHES

DEMOUNTABLE RIMS

1400 Series



Tire and Rim Wrenches are subject to abusive treatment many times, but our 1922 models are made heavier to meet any emergency

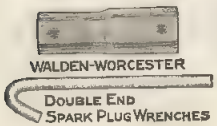
Price, All Sizes $1.10

TIRE AND RIM WRENCH

A new wrench for Tire and Rim Service. A very substantial brace made of ½" wire 12" sweep. On shank of brace is a holder for five interchangeable sockets which are held by ball friction so that sockets may not drop off. Sockets include all standard sizes. Any socket may be replaced from regular stock (our Nos. 220, 222, 224, 226, 228) The longer shank on brace provides ample clearance for all standard tires and rims. Tire Service and garages will value this very complete tool. Change of sizes quickly accomplished

No. 1431 Each $3.50

DOUBLE END SPARK PLUG WRENCHES



Pressed Steel. Case-hardened—two sizes in one. 1/64" over size of spark plug, which prevents stretching and gives better outside clearance where plugs set in port plugs or deep in block.

No. 2931 7/8"-15/16"
No. 2933 7/8"-1"
No. 2937 7/8"-1⅛"
No. 3137 15/16"-1⅛"

All Sizes, Each $0.45

NO. 20 DISPLAY AND STOCK SET

A new silent salesman carrying five each of four sizes of an *entirely new design* of Brace Socket Wrenches.

The boards are all metal, handsomely lithographed and will hang on the wall or post—they take up little space, 3 ft. 9" x 1 ft.

A big producer for the dealer—equally profitable for the tire service station.

5—1520	1.10	$5.50
5—1522	1.10	5.50
5—1524	1.10	5.50
5—1528	1.10	5.50

20 wrenches with display board, complete $22.00

Board and Hooks 12 lbs.
Wrenches, Net Weight 42 lbs.
Boxed for Shipment 65 lbs.

Prices Quoted on this Page are Manufacturer's Lists, Subject to Special Discounts.

WALDEN-WORCESTER GENERAL SERVICE WRENCHES

391 Double End Offset Wrench. Length over all 8". Socket sizes 5/8" and 1/2". Each .80

392 Double End Offset Wrench. Length over all 8-1/4". Socket sizes 7/8" and 13/16". Each 1.10

393 Quadruple Socket Offset Wrench. Length over all 10-1/2". Socket sizes 15/16", 1-1/16", 25/32", 3/4". Each 1.80

394 L Type Wrench 8" x 8". Socket sizes 3/4" and 7/8". Each .85

395 L Type Wrench 4" x 4". Socket sizes 1/2" and 9/16". Each .70

443 L Type Wrench 3-1/2" x 4-1/2". Socket sizes 5/8" and 1/2". Each .80

444 Triple Socket Offset Wrench. Length over all 9". Socket sizes 1/2", 9/16" and 5/8". Each .85

491 Double End Offset Wrench. Length over all 10-1/2". Socket sizes 9/16" and 3/4". Each .80

492 Double End Offset Wrench. Length over all 10". Socket sizes 11/16" and 15/16". Each 1.10

493 Double End Offset Wrench. Length over all 8-1/4". Socket sizes 5/8" and 11/16". Each .80

494 Offset Wrench. Length over all 5-1/2". Socket size 1/2". Each .50

495 Double End Box Type Wrench. Length over all 10". Socket sizes 1-1/4" and 1-1/8". Each .90

499 Offset Wrench. Length over all 5½". Socket size 9/16". Each .50

651 Double End Offset Wrench. Length over all 10". Socket sizes 7/16" and 9/16". Each .80

653 Double End Offset Wrench. Length over all 11". Socket sizes 7/8" and 2/8". Each .85

654 L Type Wrench 10" x 6". Socket sizes 1/2" and 11/16". Each .80

751 Double End Offset Wrench. Length over all 11-3/4". Socket sizes 5/8" and 25/32". Each .80

752 L Type Wrench 8" x 8". Socket sizes 9/16" and 11/16". Each .80

755 L Type Wrench 10" x 7". Socket sizes 5/8" and 3/4". Each .80

756 L Type Wrench 4" x 4". Socket sizes 1/2" and 7/16" Each .70

761 Double End Offset Wrench. Length over all 10-1/2". Socket sizes 3/4" and 5/8". Each .80

762 Double End Offset Wrench. Length over all 10-3/4". Socket sizes 1 1/16" and 1". Each 1.35

763 L Type Wrench. 9-1/2" x 4-1/4" Socket sizes 1/2" and 9/16". Each .80

852 L Type Wrench. 6-1/4" x 6-1/4" Socket sizes 7/16" and 1/2". Each .80

1620 Tomahawk. Triple Socket Wrench. This is the original Triple Socket Wrench trademark "TOMAHAWK," having 1 2" rod connecting the two sockets. The sockets are particularly shaped to increase their usefulness. 5/8" end socket used for spanning nuts on and off. Socket sizes 5/8" and 1/2". Each .75

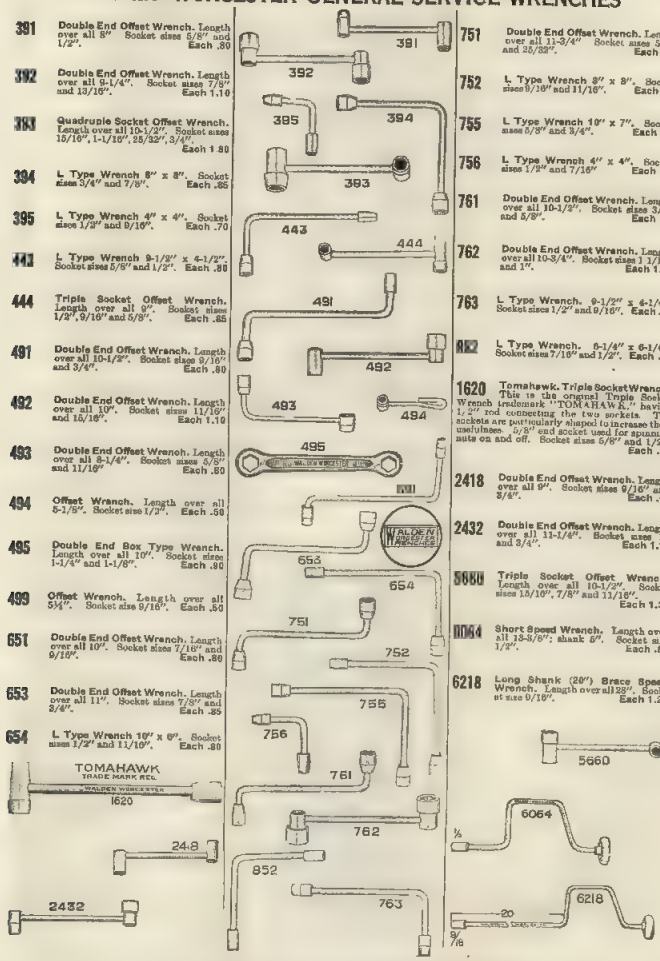
2418 Double End Offset Wrench. Length over all 9". Socket sizes 9/16" and 3/4". Each .90

2432 Double End Offset Wrench. Length over all 11-1/4". Socket sizes 1" and 3/4". Each 1.15

5660 Triple Socket Offset Wrench. Length over all 10-1/2". Socket sizes 13/16", 7/8" and 11/16". Each 1.30

6064 Short Speed Wrench. Length over all 13-3/8"; shank 6". Socket size 1/2". Each .85

6218 Long Shank (20") Brace Speed Wrench. Length over all 22". Socket size 9/16". Each 1.20



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WALDEN-WORCESTER WRENCHES

NO. 40 DISPLAY AND STOCK SET

A display and stock board, a silent salesman. The eight numbers shown are the eight best selling socket wrenches on the market. All tools which are necessary for general garage service, particularly on Ford cars. All owners doing their own repair work need these tools. A small outlay by the dealer; an assured quick turnover. The hooks, board and wrenches all packed in one box quickly set up for business and requires only space three feet nine inches by one foot.

THE 8 MOST POPULAR SOCKET WRENCHES

INDISPENSABLE FOR FORD CARS AND GENERAL SERVICE

Board and Hooks	6½ lbs.
Wrenches (net weight)	50 lbs.
Boxed for Shipment	70 lbs

No. 40 Set **$5.50**

NO. 40 DISPLAY AND STOCK SET

Board Size, 3 ft. 9 in. x 1 ft.

40 Wrenches

5	1620	1.10	5.50
5	1620	.75	3.75
5	2418	.90	4.50
5	2718	.65	3.25
5	3620	.80	4.00
5	5660	1.30	6.50
5	5810	.60	3.00
5	7018	1.00	5.00
40 Wrenches			Total $35.50

NO. 80 DISPLAY AND STOCK SET

These free Display Boards have wooden backs, the front is of sheet metal handsomely lithographed in black and golden rod, the hooks are held by nut and check nut and there is no possibility of the board warping out of shape. An ornament to any store and a valuable sales producer

No. 80 Display and Stock Set

5	VG2	95	4 75
5	VG3	55	2 75
5	1018	2 50	12 50
5	1020	2 50	12 50
5	1620	75	3 75
5	1881	1 20	6 00
5	2418	80	4 25
5	2718	65	3 25
5	3622	65	3 25
5	3822	70	3 50
5	4564	1 00	5 00
5	5660	1 30	6 50
5	5810	60	3 00
5	6018	95	4 75
5	5020	95	4 75
5	6064	85	4 25
80 Wrenches		Total,	$85.00
Board and Hooks (crated)			50 lbs.
Wrenches (boxed for shipment)			103 lbs.
Wrenches (net weight)			85 lbs.

Size of Board, 6 ft. x 2 ft.

80 Wrenches
Complete with Display Board

80 Set **$85.00**

DIRECTORY OF WRENCHES FORD CAR

Name of Part	Wrench
Front Axle	
Ball Socket	6318-6018-2418*
Front Radius Rod	5660*-4320†
Front Spring Clips	2418*
Front Spring Hanger	5660*
Front Spring Perch	5660*
Spindle Bolt	5660*
Spindle Bolt Nut	2418*
Spindle Connecting Rod	5660*
Steering Yoke Clamp	6318-2418*
Rear Axle	
Brake Shoe Support	1620*-2418*
Differential Case	2418*
Differential Drive Gear	6064-1620*-494
Drive Shaft Roker Bearing	5620-1620*
Hub Nut	5660*-4320†
Radius Rod	5960*
Rear Axle Housing	6316-6064-1620*-494
Rear Spring Clip	5660*-4228†
Rear Spring Hanger	5660*
Rear Spring Perch	762-4232†
Rear Wheel to Brake Drum	5660*
Motor Unit	
Carburetor Flange (On ▬ without self starter)	1018
Commutator Case Support	6018-2718-2418*
Commutator Case Support (On cars with self starter)	6020-2720-1620*
Connecting Rod	1020-5810*
Crank Case	6018-2718-2418*
Crank Case Arm	6318-2418*
Crank Case Lower Cover	6064-1620*-494
Crank Shaft Bearing	1881-2418*
Cylinder Cover	6018-2718-2418*
Cylinder Cover (On cars with self starter)	6020-2720-1620*
Cylinder Head	6020-1020-3620-1620*
Cylinder Valve Cover	1018
Fan Adjustment	6018-3718
Fan Bracket	2418*
Fly-Wheel	3822
Inlet and Exhaust Clamp	1018-2418*
Magnet	6018-2718-2418*
Motor Support Front	6020-1620*
Piston Pin Locking Screw	1881
Radiator Support	6218-2718-2418*
Spark Plug	3020
Valves	VG2-VG3
Water Cylinder Inlet Connection	1020-3620-1620*
Water Cylinder Outlet Connection	3620-1620*
Steering Assembly	
Steering Post Bracket	6318-2418*
Steering Tube Flange	6064
Transmission	
Brake Adjustment	4564*
Brake and Reverse Support	2418*
Clutch Pedal Support	2418*
Controller Shaft Bracket	2418*
Hub Brake Rod Support	1620*
Low Speed Check Nut	4564*
Reverse Adjustment	4564*
Transmission Cover	6018-6318-2418*
Universal Ball Cap	1018-2718-2418*
Miscellaneous	
Body Bracket	5660*
Dash Bracket to Dash	6064-1620*
Front Fender Iron	2418*
Front Fender Iron (side)	6218
Muffler	6064-6318-1620*
Running Board	1631
Running Board to Fender	1881

*Indicates uses for owner's selection.

Note—†May not be carried in all Jobbers' stocks but will be ordered for you upon request.

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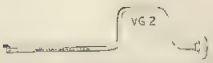
WALDEN-WORCESTER WRENCHES

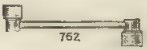
SERVICE WRENCHES FOR FORD CARS



VG2 Long Shank Brace Grinder Wrench. Some garage men prefer the brace grinder in place of short grinder VG3. Fork end flexible and will reach all valves including one under dashboard. Each .95

VG3 Short Valve Grinder Wrench. The original wire handle valve grinder redesigned with 5/8" bar handle which swivels on cone bearing. The fork and fits the head perfectly. Each 55

494 Single Socket Offset Wrench. Length over all 5-1/2". Socket size 1/2". Used on:
Crank case lower cover
Differential drive gear
Rear axle housing.
Each .50

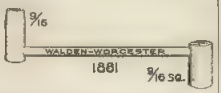


762 Double Socket Offset Wrench. Length over all 10-3/4". Socket sizes, 1-1/16" and 1". Used on:
Rear spring perch
TRUCK:
Rear spring clip
Each 1.35

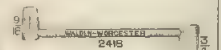
1018 "Tee Flex" or Universal Joint Wrench. Length over all 12-1/4". Socket size 9/16". Used on.
Carburetor flange
(On cars without self starter)
Commutator case support
Cylinder valve cover
Inlet and exhaust clamp
Universal ball cap
Each 2.50

1020 "Tee Flex" or Universal Joint Wrench. Length over all 12-1/4". Socket size 5/8". Especially adapted for use on the Fourth Connecting Rod. Used on
Connecting rod
Cylinder head
Water cylinder inlet connection
Each 2.50

1620 Tomahawk Triple Socket Wrench. Socket sizes 5/8" and 1/2". This is the original Triple Socket Wrench, trademark "TOMAHAWK," having 1/2" rod connecting the two sockets. Used on:
Axle housing
Brake shoe support
Crank case lower cover
Cylinder head
Dash bracket to dash
Differential drive gear
Drive shaft roller bearing
Motor support, front
Muffler
Water cylinder inlet connection
Water cylinder outlet connection
Each .75



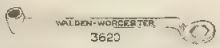
1881 Double End Offset Wrench. Length over all 9". Socket sizes 9/16" hex. and 9/16" square. Used on:
Crank shaft bolt
Piston pin
Locking screw
Running board
Running board to fender
Each 1.20



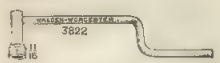
2418 Double End Offset Wrench. Length over all 9". Socket sizes 9/16" and 3/4". Used on
Brake and reverse support
Brake shoe support
Clutch pedal support
Crank case arm
Crankshaft bearing nut
Crankshaft rear bearing bolt
Dash bracket to dash
Differential case
Fan bracket
Front fender iron
Front spring clip
Inlet and exhaust clamp
Radiator support
Spindle bolt nut
Steering post bracket
Steering yoke clamp
Universal ball cap
TRUCK.
Rear axle housing, front
Rear axle housing, rear
Each .90

2718 Tee Handle Wrench. Handle 6" shank 12". Socket 9/16".
Used on
Commutator case support
Crank case
Cylinder cover
Fan adjustment
Magneto
Radiator support
Universal ball cap
Each .65

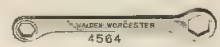
2720 Tee Handle Wrench. Handle 6", shank 12". Socket 5/8". Used on:
Commutator case support
(On cars with self starter)
Cylinder cover (on cars with self starter)
Drive shaft roller bearing
Each 65



3620 Spark Plug and Cylinder Head Wrench. Length over all 11". Socket sizes 15/16" and 5/8". The 15/16" hex. type opening has been so designed as to fit down squarely on the spark plug which is not true using usual claw or open end type. The 5/8" socket has been shaped to make it possible to take all cylinder head cap screws, even the two under the dash on latest models. Used on:
Cylinder head
Spark plug
Water cylinder inlet
Water cylinder outlet
Each .80



3822 Socket size 11/16" hex. Used on fly wheel cap screws, heretofore considered as impossible place for a socket wrench. An ugly place made accessible. Each .70



4564 Ratchet Wrench. 11/16" hex. opening. Particularly designed for use on the Ford brake and reverse transmission bands. Opposite end 15/16" for use on slow speed connecting lock nut. One of the most valuable tools to an owner on account of the ease in taking up bands. Each 1.00

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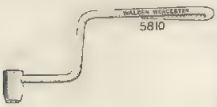
WALDEN - WORCESTER WRENCHES

SERVICE WRENCHES FOR FORD CARS

5660 Triple Socket Offset Wrench. Length over all 10¼". Socket sizes 15/16", 7/8" and 11/16". Used on:
Body bracket
Front radius rod
Front spring perch
Front spring hanger
Radius rod
Rear hub nut
Rear spring clip
Rear spring hanger
Rear wheel to brake drum
Spindle bolt
Spindle connecting rod
TRUCK
Brake support
Rear axle housing split
Rear spring hanger
Each 1.30

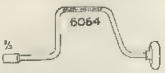


5810 Connecting Rod Wrench. Fits all connecting rod cap nuts. Includes the fourth connecting rod. This is an original design, the first wrench made to reach the fourth connection without removing the engine from the car. Be sure you get the wrench with all right angle bends and loop handle. No. 5810 stamped on handle. Each .60

6018 Long Shank (11") Brace Speed Wrench. Length over all 10-3/4". Socket size 9/16". Used on:
Commutator case support
Crank case
Cylinder cover
Fan adjustment
Magneto
Transmission cover
Each .90

6020 Long Shank (11") Brace Speed Wrench. Length over all 10-1/4". Socket size 5/8". Used on
Commutator case support (on cars with self starter)
Cylinder cover (on cars with self starter)
Cylinder head
Each .95

6022 Long Shank (11") Brace Speed Wrench. Length over all 10-1/4". Socket size 11/16". Used on:
TRUCK:
Rear axle housing split
Each .95



6064 Short Shank (8") Brace Speed Wrench. Length over all 13-3/8". Socket size 1/2". Used on:
Crank case lower cover
Differential drive gear
Muffler
Rear axle housing
Steering tube flange
Each .85

6218 Long Shank (20") Brace Speed Wrench. Length over all 28". Socket size 9/16". Used on:
Front fender iron (side) radiator support.
Each 1.20

6316 Nut and Bolt Speed Wrench Socket sizes 1/2" and 1/2". Any Ford mechanic who sees this bolt and nut speed wrench, will immediately recognize its usefulness in splitting the rear axle housing on the Ford car. With this wrench one man can do the work of two. Used on:
Rear axle housing bolt and nut
Each 3.00

6318 Nut and Bolt Speed Wrench Length over all 20-3/8". Socket sizes 9/16" and 9/16". Used on:
Ball socket, bolt and nut
Crank case arm, bolt and nut (side)
Muffler support, bolt and nut
Steering post bracket, bolt and nut
Steering yoke clamp, bolt and nut
Transmission cover, bolt and nut
Each 3.00

NEW WHEEL ASSEMBLY WRENCH FOR FORD CARS

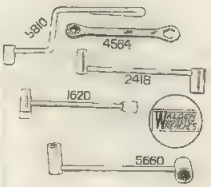
A Brace (speed wrench), with two sockets, each socket having two broached openings to take four parts, front hub cone and axle nut, hub cap and rear axle nut.

Dimensions Extreme length, 18½", ⅝", ¾" diameter, 9" leverage, 12" sweep, swivel handle on each end adjoining socket.

1490 Each 3.00

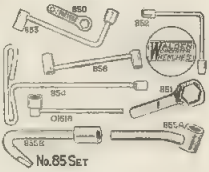
NO. 57 SET - FORD CAR

Price 4.55



NO. 85 SET FOR FORDSON TRACTOR

Each 9.00



Clutch housing bolt	852
Clutch lever bracket bolt	856
Clutch shaft nut	851
Connecting rod cap bolt nut	856
Crank case bolt	856
Crank case nut	856
Crank shaft bearing cap bolt nut	
Main bearing nut	853
Cylinder front cover bolt	856
Cylinder front cover cap screw	856
Cylinder head cap screw	856
Dash cap screw	853
Differential housing bolt	856
Differential housing	855-B
Exhaust tube bracket bolt	852
Fan adjusting nut and screw	850
Foot bracket cap screw	854
Front wheel spindle nut	855-A
Fuel tank strap nut	856
Gear shifter plate cap screw	854
Radiator connection bolt	856
Radiator connection bolt nut	856
Radiator cover bolt	856
Radiator cover bolt nut	856
Radiator tank bolt	852
Radiator tank bolt nut	852
Radiator top tank cap screw	854
Radius rod bolt nut	01516
Rear axle housing cap screw	853
Rear axle split	856-835-B
Rear wheel hub cap screw	856-A-B
Steering arm ball nut	01516
Steering arm nut	855-A
Steering shaft nut	01516
Steering wheel nut	850-01516
Transmission housing bolt	856
Transmission housing bolt nut	856
Transmission housing cap screw	856
Transmission draw bar cap screw	853
Transmission housing plate cap screw	856
Transmission oil plug	855-A

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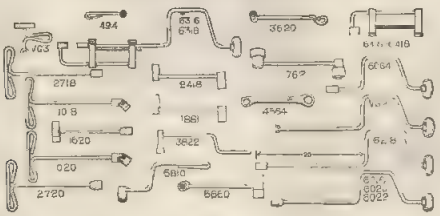
WALDEN-WORCESTER WRENCHES

SERVICE WRENCHES FOR FORD CARS



VG2 Long Shank Brace Grinder Wrench. Some garage men prefer the brace grinder in place of short grinder VG3. Fork end flexible and will reach all valves including one under dashboard. Each .95

VG3 Short Valve Grinder Wrench. The original wire handle valve grinder redesigned with 5/8" bar handle which swivels on cone bearing. The fork and fits the head perfectly. Each .65

494 Single Socket Offset Wrench. Length over all 5-1/8" Socket size 1/2". Used on:
Crank case lower cover
Differential drive gear
Rear axle housing. Each .50

762 Double Socket Offset Wrench. Length over all 10-3/4". Socket sizes, 1-1/16" and 1". Used on:
Rear spring perch
TRUCK:
Rear spring clip Each 1.35

1018 "Tee Flex" or Universal Joint Wrench. Length over all 13-1/4". Socket size 9/16". Used on:
Carburetor flange
(On cars without self starter)
Commutator case support
Cylinder valve cover
Inlet and exhaust clamp
Universal ball cap Each 2.50

1020 "Tee Flex" or Universal Joint Wrench. Length over all 13-1/4". Socket size 5/8". Especially adapted for use on the Fourth Connecting Rod. Used on.
Connecting rod
Cylinder head
Water cylinder inlet connection Each 2.50

1620 Tomahawk Triple Socket Wrench. Socket sizes 5/8" and 1/2" This is the original Triple Socket Wrench, trademark "Tomahawk," having 1/2" rod connecting the two sockets. Used on:
Axle housing
Brake shoe support
Crank case lower cover
Cylinder head
Dash bracket to dash
Differential drive gear
Drive shaft roller bearing
Motor support, front
Muffler
Water cylinder inlet connection
Water cylinder outlet connection Each .75

1881 Double End Offset Wrench. Length over all 9" Socket sizes, 9/16" hex. and 9/16" square. Used on:
Crank shaft bolt
Piston pin
Locking screw
Running board
Running board to fender Each 1.20

2418 Double End Offset Wrench. Length over all 9" Socket sizes 9/16" and 3/4". Used on:
Brake and reverse support
Brake shoe support
Clutch pedal support
Crank case arm
Crankshaft bearing nut
Crankshaft rear bearing bolt
Dash bracket to dash
Differential case
Fan bracket
Front fender iron
Front spring clip
Inlet and exhaust clamp
Radiator support
Spindle bolt nut
Steering post bracket
Steering yoke clamp
Universal ball cap
TRUCK
Rear axle housing, front
Rear axle housing, rear Each .90

2718 Tee Handle Wrench. Handle 8", shank 12". Socket 9/16". Used on
Commutator case support
Crank case
Cylinder cover
Fan adjustment
Magnet
Rad ator support
Universal ball cap Each .65

2720 Tee Handle Wrench. Handle 6", shank 12". Socket 5/8". Used on
Commutator case support
(On cars with self starter)
Cylinder cover (on cars with self starter)
Drive shaft roller bearing Each .65

3620 Spark Plug and Cylinder Head Wrench Length over all 11" Socket sizes 15/16" and 5/8". The 15/16" hex. type opening has been so designed as to fit down squarely on the spark plug which is not true using usual claw or open end type
The 5/8" socket has been shaped to make it possible to take all cylinder head cap screws, even the two under the dash on latest models. Used on:
Cylinder head
Spark plug
Water cylinder inlet
Water cylinder outlet Each .80

3822 Socket size 11/16" hex. Used on fly wheel cap screws, heretofore considered an impossible place for a socket wrench. An ugly place made accessible. Each .70

4564 Ratchet Wrench, 11/16" hex. opening. Particularly designed for use on the Ford brake and reverse transmission bands. Opposite end 15/16" for use on slow speed connecting lock nut. One of the most valuable tools to an owner on account of the ease in taking up bands. Each 1.60

5660 Triple Socket Offset Wrench. Length over all 10¼" Socket sizes 15/16", 7/8" and 11/16". Used on:
Body bracket
Front radius rod
Front spring perch
Front spring hanger
Radius rod
Rear hub nut
Rear spring clip
Rear spring hanger
Rear wheel to brake drums
Spindle bolt
Spindle connecting rod
TRUCK
Brake support
Rear axle housing split
Rear spring hanger Each 1.30

5810 Connecting Rod Wrench. Fits all connecting rod cap nuts. Includes the fourth connecting rod. This is an original design, the first wrench made to reach the fourth connector without removing the engine from the car. Be sure you get the wrench with all right angle bends and loop handle. No. 5810 stamped on handle. Each .60

6018 Long Shank (11") Brace Speed Wrench. Length over all 19-1/4" Socket size 9/16". Used on:
Commutator case support
Crank case
Cylinder cover
Fan adjustment
Magnet
Transmission cover Each .95

6020 Long Shank (11") Brace Speed Wrench. Length over all 19-1/4". Socket size 5/8". Used on
Commutator case support (on cars with self starter)
Cylinder cover (on cars with self starter)
Cylinder head Each .95

6022 Long Shank (11") Brace Speed Wrench. Length over all 19-1/4". Socket size 11/16". Used on
TRUCK:
Rear axle housing split Each .95

6064 Short Shank (5") Brace Speed Wrench. Length over all 13-3/8" Socket size 1/2". Used on:
Crank case lower cover
Differential drive gear
Muffler
Rear axle housing
Steering tube flange Each .85

6218 Long Shank (20") Brace Speed Wrench. Length over all 28". Socket size 9/16". Used on
Front fender iron (side) radiator support Each 1.20

6316 Nut and Bolt Speed Wrench. Socket sizes 1/2" and 1/2". Any Ford mechanic who sees this bolt and nut speed wrench, will immediately recognize its usefulness in splitting the rear axle housing on the Ford car With this wrench one man can do the work of two. Used on:
Rear axle housing bolt and nut Each 3.00

6318 Nut and Bolt Speed Wrench. Length over all 20-3/8". Socket sizes 9/16" and 9/16". Used on.
Ball socket, bolt and nut
Crank case arm, bolt and nut (side)
Muffler support, bolt and nut
Steering post bracket, bolt and nut
Steering yoke clamp, bolt and nut
Transmission cover, bolt and nut Each 3.00

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MINE LIGHTING

By E. N. Zern, E. M.

(For Illustrations of Modern Oil, Carbide and Electric Mine Lamps See the Catalog Pages Which Follow.)

Historical

The first written record of the use of coal in England is found in a receipt of "twelve cart loads of coal" by the Abbey of Peterboro in the year 852 A. D., but it is doubtful whether the Anglo-Saxon word "coal" does not mean peat. The first record of actual mining operation is in the books of the Bishop of Durham, 1180 A. D. A legal document in Scotland shows the conveyance of a mine in the year 1210. Coal was certainly sold as an article of commerce in the year 1215, likewise the date of Magna Charta; and this latter date may be safely taken as the year in which coal mining became established as a business in England on a commercial basis.

In the United States coal mining has been in operation about 170 years. The earliest mention of coal dates back about 220 years.

The history of mine lighting shows an equal antiquity with coal. The problem of how to obtain a safe and efficient mine lighting system arose as soon as the outcrop had been pierced, and has continued until our day. We shall see that on several occasions it has been solved with apparent satisfaction and great rejoicing amongst the workmen; but in a comparatively short time the manifestation of unrest on the part of both miner and operator showed that somewhere there was a fault, somewhere an imperfection, whether in lack of illumination or of safety, that needed to be remedied before success could be assured. When we reflect that mining of coal has been carried on for several centuries we are naturally interested in the solution of a problem so much affecting the security of man. We inquire what progress has been made during this time. To answer this latter query has been the inspiration of this narrative, in which it is intended to trace the successive steps in the development of mine lighting and the conscientious endeavors of men to add to the happiness and safety of their fellow men.

Primitive Methods of Lighting

The early Romans, we are told, used large torches and lamps fed with tallow for mine lighting. The Japanese lighted many of their mines in the same way, and continued this method as late as 1890. In England torches are believed to have been used for lighting the outcrop workings. To ignite these flint and tinder were used and sometimes by briskly rubbing together two dry sticks, which kindled owing to friction. On the Continent relics in ancient mines furnish bases for the belief that earthen oil lamps, similar in shape to those now made, were used instead of torches.

As time went on and workings spread out the ignition of gas and explosions became frequent. In the former event the men were often seriously or fatally burned; in the latter the effects, though disastrous, must have been confined within comparatively narrow limits; but the menace of gas was increasing, and a great fear sprung up in the hearts of the workmen. The fact that the behavior of gas was mysterious and little understood added to its terrors. It was plainly to be seen that the use of torches, oil lamps and candles was fraught with dangers.

These workmen now did the very natural thing to do—they sought a substitute for the flaming lights. Dried fish skins, from the scales of which a faint phosphorescent light was given, were brought into use. A mixture of flour and lime, made from oyster shells, and called Canton phosphorus, was tried. Unknowingly, they adopted the method used by their fellow workmen in Brazil, namely, fire-flies in a bottle. In Flanders amadon, or fungus tinder, was employed in dangerous parts of the mines; but these, and a few other attempts to derive light with safety, had a common defect in that the light yielded by the substance was much too feeble to enable men to work successfully. Again, men were unable to examine the roof for weak places, and fatalities from falls increased. In their despair a few voluntarily chose to work in the dark in gaseous places, and the man who could so work was held at a premium.

Mining of Coal Stimulated by Inventions

Mining advanced slowly up to the year 1710. The problems of haulage, hoisting, pumping, etc., were as troublesome as that of lighting. At that time 350 feet was about the maximum depth of shaft, and the area worked to one shaft was seldom more than a 600 foot radius. Most of the coal was obtained from shallow openings and proved sufficient to meet the light demands; but the invention of the atmospheric engine by Thomas Newcomen, in 1710, changed the entire aspect of the industry. It offered the mine owner mechanical power for those places where theretofore man-power had been used. Hoisting and pumping, especially, could be greatly facilitated, and the British colliery owners eagerly adopted Newcomen's invention, crude though it was. Everywhere it was hailed as the most wonderful achievement of ages. When James Watt, in 1763, began experimenting on steam and improving the construction of engines, it drew the attention of a number of men more or less familiar with mechanics to the steam engine, and resulted in the adoption of many good features.

The direct result of these improvements was the adoption of the steam engine in all industries. This, in turn, created a demand for coal, and it became evident to colliery owners that preparations must be made to meet it. The shallow workings which had furnished sufficient fuel to meet the demand for "house" coal were inadequate, now that a cry for coal arose from all quarters. It was obvious that shafts must be sunk to lower measures and that the problems of deeper mining must be confronted.

The increase in depth and the extensions of working limits brought on an increase of gas in the workings. Ventilation had not received much attention; in fact, it was not deemed a necessity.

It might even become a menace, as it was known that gas was more violently explosive at such places as had a small current of air; and, further, is was believed that gases resulting from the burning of candles in stagnant places made fire-damp less explosive.

The Use of Eternal Lamps

A bold measure was now suggested, based on the principle that if the accumulation of gas could be prevented small amounts could do no harm. The plan consisted of burning lamps, candles, or torches continuously in all fiery places in the mine, so that the gas would be consumed as rapidly as generated. These lights were called "eternal lamps" and, as the name implies, were kept burning continuously night and day, Sundays and holidays as well. In several places this idea was carried out successfully, but on account of the smoke given off in the stagnant air, this method of fighting fire with fire had to be abandoned in most cases.

The Steel Mill

It was during these days of uncertainties that Sir James Lowther became interested in collieries as an operator. He at once took a great interest in the problem of overcoming the menace of gas. A young man in his employ, named Carlisle Spedding, had early attracted his favorable notice on account of the great interest he manifested in all phases of mining. Accordingly, Spedding was sent to Newcastle-on-Tyne to thoroughly learn the methods of mining so that he should be competent to assume charge of Sir James' collieries.

Carefully concealing his name and purpose, Spedding procured work as a miner, and applied himself to the learning of all that pertained to mining. One day he was seriously burned in an ignition of fire-damp, and he was obliged to reveal his identity and purpose of employment. Upon recovery from his injuries he resumed his labors, and in 1750 rewarded the confidence Sir James had reposed in him by originating the "steel-mill." This mill consisted of a thin disk of steel so mounted in an iron frame that it could be rotated at a rapid rate by means of a spur-gear and hand crank. The light was produced by holding a piece of flint against the rim of the rapidly-moving wheel, causing a bright shower of sparks. These sparks were not considered capable of igniting fire-damp. Spedding knew that flint and steel had been used as early as 1733 in gaseous places, and the steel-mill was merely an elaboration of this idea.

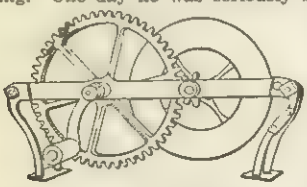

Fig. 1. The Steel Mill.

These mills were operated mostly by boys. They were carried by means of a leather band passing through the back end of the frame and about the neck of the operator. This permitted the use of both hands to press the flint against the wheel rim. Frequently several steel-mills had to be "played," as it was called, in one place at the same time in order to provide sufficient light. The cost of operating them was high, and it is stated that the wages of the "players" in an ordinary colliery amounted to as high as $800 per month.

The steel-mill was eagerly adopted, however, and much confidence was placed in the statement that it would not ignite the gas. Whatever faith remained up to 1785 that the steel-mill would not cause an explosion was decisively shattered, as may be inferred from the following entry in Sykes' Local Records of Northumberland and Durham,* etc.:

"June 1785. An explosion occurred in Wallsend colliery by which one man lost his life. This was the first explosion which was distinctly known to have taken place at the steel-mill. Some doubt remained up to this time as to whether the fire-damp would explode at the spark of the steel-mill or not; but the fact was clearly ascertained on this occasion, as the person, John Selkirk, who was playing the mill at the time, survived the accident."

Wallsend was the deepest colliery on the Tyne, being stated by Brand, in 1787, to be 630 feet deep.

This explosion had caused damage to the shaft, and the following entry is interesting, as showing the date at which attempts were first made to use reflected sun-light for lighting underneath:

"In repairing the shaft after these explosions the mode of throwing the rays of the sun down a shaft by a mirror, so as to light it, was accidentally discovered in the following manner: While the people were working in the shaft at about 80 fathoms (480 feet) from the surface, a carpenter was employed to do something at the head-framing, immediately above the mouth of the shaft, and in using his saw he accidentally turned the bright blade of it so as to throw a pencil of the sun's rays suddenly down the pit, to the great terror of the workmen below, who thought the pit had fired again. The cause of their alarm however, being soon discovered, it suggested the idea of applying a mirror to throw the light of the sun down the shaft, which mode of lighting has since been frequently resorted to when other lights could not be used."

As might be expected, attempts were made to reflect the light from the shaft bottom back into the workings, but, owing to losses due to obstructions and dust, it was impossible on the brightest days to light workings, however limited in extent.

The steel-mill increased in favor for the simple reason that it was the best device known, and it was generally adopted for use in gaseous workings and in those collieries where explosions had just taken place. The light given off by it was feeble, unsteady, and otherwise unsatisfactory, and many miners preferred to take the risk of using flaming lights. By the year 1800, however, steel-mills had a wide use, and were, as a measure for safety, superior to candles; but many accidents no doubt resulted from their use, and the use of candles. Explosions continued to grow more violent and more destructive to life and property. In an explosion in one of the collieries under his charge Spedding himself was killed, thus ending, prematurely, a life full of rich promise to the coal industry.

*"The Colliery Manager's Handbook"—Pamely.

Origin of Mining Institutes

These calamities aroused much sympathy and men began to concentrate their energies toward arriving at some solution to the problem of mine lighting that would have permanence.

J. J. Wilkinson, a London barrister, believed that most of the disasters could be attributed to the apathy existing among the operators, and that all that was needed was a concerted effort for betterment. He issued a call to the prominent coal men in the Northumberland and Durham colliery districts, inviting them to attend a meeting to be held to form a Society for the Prevention of Colliery Accidents. There was a ready response on the part of all, the clergy especially endorsing the idea, and the society was formed.

However, before the formation of the London Society the interest of two men in the second principle, i. e., the invention of a safe lamp, had been excited. First, Baron von Humboldt, the celebrated philosopher and traveler, in 1796, had made the plan of a lamp for use in the dangerous sections of a mine. The flame was entirely insulated from the air, and could burn only for a short time, or until the air contained within the lamp was exhausted. It was of such inconvenient construction that little was heard of it.

The second man was Dr. William Reed Clanny of Sunderland, a physician whose practice largely consisted of the treatment of men injured in the mines. He described, before a local Society for Prevention of Mine Accidents, organized in his home town, a lamp which he had constructed, and which he hoped would do much toward eliminating the dangers of fire-damp.

The Clanny Lamp

The flame of this lamp was insulated, and the air supply necessary for its combustion was forced, by means of a bellows, through a stratum of water placed in the bottom. A second layer of water was arranged above the flame, through which the products of combustion escaped. The water thus prevented the passage of flame out of the lamp. In an explosive atmosphere the light went out. Scientific men, amongst others Dr. Wollaston, Mr. Pepys, and Baron Berzelius, the great Swedish chemist, approved of Dr. Clanny's lamp, but the colliery owners, to his great surprise, gave him no encouragement. This was no doubt due to the fact that shortly after the formation of the national society, Mr. Wilkinson, believing that such a vexatious problem could be solved only by the most renowned scientists, had written Sir Humphrey Davy, asking for his active co-operation. This letter, unfortunately, did not reach Sir Humphrey.

Fig. 2. Early Type of Clanny Lamp.*

When it became apparent that the lamp of the unknown Clanny was to receive no recognition at the hands of the national Society it was decided by Clanny's followers to appeal the matter to the people, and the power of the press was invoked. J. H. H. Holmes called public attention to Dr. Clanny's lamp, and demanded a trial of it, which was finally granted. The lamp proved to be unsuccessful when tested in an inflammable mixture of air and gas at the Herrington Mill colliery, on October 16, and again on November 20, 1815—more than two years after Dr. Clanny's description before the local society at Sunderland. Clanny's first lamp was, therefore, never used in collieries.

The summer of 1815 should ever be held in memory as one of the most notable periods in coal mining. It was at this time that Dr. Murray and Mr. Brandling sought to improve on the Clanny lamp. George Stephenson began to experiment by burning candles to windward of lighted blowers; Sir Humphrey Davy's services were engaged by the national society; and J. H. H. Holmes, ably assisted by Dr. Clanny, aroused a keener public interest through contributions to the press on safety-lamps.

Investigations of Sir Humphrey Davy

The most important event of the summer was, undoubtedly, the advent of Sir Humphrey Davy into the field of investigation. It is true that much had been accomplished before he took hold, but the rapidity with which his mind, trained to separate the chaff from the wheat in science, grasped the real need of the situation is one of the most remarkable achievements of man.

In August, 1815, Sir Humphrey Davy visited a colliery near Newcastle-upon-Tyne to see for himself the behavior of gases in the mines. Upon leaving he ordered that a sample of fire-damp be sent to him, and in fourteen days from the time the sample left the colliery for London by wagon Davy announced his safety-lamp, the principle of which is found in all oil safety-lamps of this day. On November 9th, of the same year, he read his celebrated paper on fire-damp before the Royal Society of London, in which was a fascinating account of his experiments leading to the invention of the lamp.

In brief, he first tried phosphorus, and likewise the electric light in closed vessels, but without success. He also had a lamp constructed with two valves which closed automatically in an atmosphere contaminated with fire-damp, due to the increased heat of the flame produced by the combustion of the gases. He next turned his attention to flame. In his experiments it was made plain that methane required a large proportion of air to make it explosive. He experimented with small metallic tubes and sieves of brass and iron wire-gauze, which he found, under certain conditions, prevented the passage of flame. To quote from his paper:

"I have already discovered that explosive mixtures of mine-damp will not pass through small apertures, or tubes; and that if a lamp or lantern be made air-tight on the sides and is furnished with apertures to admit the air it will not communicate flame to the outward atmosphere. Again, I have discovered that gas mixed in any proportion with common air will not explode in a small tube, the diameter of which is less than ⅛-inch.

After series of experiments Davy enclosed his flame in a wire-gauze 1/40 to 1/60 of an inch in diameter and having 784 apertures to the square

*From "Mine Gases and Explosions," J. T. Beard.

inch. This gauze was made into a cylinder 10 inches long, two inches in diameter, and closed at one end with wire-gauze, thus forming a cage. A lighted candle was inserted at the open end, soft clay being used to fill the space between the candle and the gauze to exclude the passage of air or gas. When this lamp was introduced into a gaseous mixture it was found that the gas passed freely into the lamp and was exploded there, but the ignited mixture did not pass out of the gauze and ignite the explosive mixture surrounding the lamp. If the fire-damp was in sufficient quantity the candle went out. Davy also noticed that after an internal explosion had occurred the mixture continued to burn, and that the gauzes were heated to redness. He had previously discovered that when the gauze was heated to a dull redness the flame would pass through the finest wire gauze meshes, and that external fire-damp was then lighted. He was therefore aware that the use of his lamp would not be a guarantee of immunity from danger; it would merely minimize it.

Fig. 3. The Davy Lamp.

A lamp was now built to withstand mine usage, the gauze being the same as in the candle-lamp, except that supplementary gauzes were added to the top of the cylinder to increase the cooling surface at the critical point. An oil cup was introduced instead of a candle, and the lamp was supported and protected by three upright bars joined at the top to form a loop, to which a ring was attached as a handle. The lamp in this form was first used at Hepburn colliery, on the Tyne, on January 1, 1816.

The Stephenson Lamp

It is proper at this point to note the invention of George Stephenson, who is deserving of great credit for the valuable discoveries he made. He was a skillful enginer, and in 1812 obtained an appointment at the Killingworth colliery as erector of machinery. By many he was believed to be the first to discover and introduce a safety-lamp in mines, and the persistency of his friends aroused resentment amongst Davy's supporters. The dispute for first honors, while confined mostly to the friends of each, occasioned much bitterness. Smiles, in his "Life of George Stephenson," asks: "What chance had the unknown workman of Killingworth with so distinguished a competitor?"

From all the evidence presented, the facts appear to be as follows: In August, 1815, Stephenson requested Nicholas Wood, an official at Killingworth pit, to make him a drawing of a lamp. There is little doubt, therefore, that Stephenson was experimenting with lamps at the same time as Sir Humphrey. In October the lamp was being constructed for him by Newcastle tinsmiths, and the glass by a Northumberland glass house. The feed-air was admitted under the glass cylinder, through a tube ¼-inch in diameter, the amount being regulated by means of a slide. On testing this lamp on or about October 21st, it was found not satisfactory. Stephenson then took the lamp to another Newcastle tinsmith, and had it so reconstructed that there were three tubes to admit the air instead of one. He tried this second lamp November 9th, and the results were somewhat better than at the first trial.

The announcement of Davy's lamp appeared on November 18th in the Newcastle "Chronicle." Two days later Stephenson went to Newcastle and had a drawing made of his third lamp. This differed from the preceding lamps in several ways, one of which was that the air was admitted under the glass by a double row of small perforations; but it did not have the wire-gauze. This lamp was tested on November 28th, 1815, at Killingworth pit with such gratifying results that it was pronounced "perfectly safe." Later, of course, it was shown that Stephenson's third lamp was not safe, as an explosive atmosphere could be readily fired with it, and the Brandlings, his most ardent supporters, preferred and used Davy lamps at their collieries; but to Stephenson must be given the credit for discovering one of the three great principles of the safety-lamp, namely, confining the burnt air in the upper portion of the lamp.

Fig. 4. Scotch Davy Lamp.

Stephenson later applied Davy's gauzes to his lamp, now called the Geordy, as did Clanny also to his lamp. The latter made further improvements by surrounding the flame with a glass cylinder instead of a glass window, as in his first lamp. The need of this was apparent to Clanny, because his experience as a "company" doctor had taught him that more accidents from falls occurred when the men were using steel wheels, owing to the faint illumination of the roof, than when they had the more abundant light of the candle. His introduction of the glass cylinder was condemned, however, by Davy as unsafe. This incident illustrates the different viewpoints of these two men, both striving for the same goal—the betterment of humanity.

Reception Given First Forms of Safety Lamps

The attitude of the miner toward the new Davy safety-lamp was, on the whole, favorable; but in some quarters the self-sufficient reason that their fathers and grandfathers had not used them, caused trouble. In some localities a superstitious fear was aroused. The gratification of mining men who learned to use the lamp, as well as the feeling of security inspired by them, is shown in the writings of John Buddle, here quoted:

"During the last 10 months it has been extensively employed in all the collieries under my inspection; and it gives me the highest pleasure to be able to state that during that time not the slightest accident by fire has occurred from its use, though

700 lamps are daily employed. In the parts of mines where fire-damp prevails the surveys and inspections are now carried on by the light of the lamp without apprehension of danger from explosion; for experience has shown us that with caution or keeping it in proper repair, it is absolutely safe, and for the truth of this I appeal to all my professional brethren who have had occasion to use it, without fear of contradiction. After finishing their day's work, the colliers bring their Davys to the lamp-keepers' cabin, who, unlocking them, takes the bottom into his own possession and allows the colliers to take the wire-gauze cylinders home for the purpose of cleaning them thoroughly. When the colliers return to their work the following morning the lamp-keeper, having replenished the lamp with oil and cotton, lights them and screws on their tops, and then examines them with the utmost care before he delivers them for use; but if the least injury or defect appears in the gauze, or any other part of a lamp, it is immediately set aside to be repaired, and the person to whom it belongs is supplied with a perfect one. After having dispatched the business of the morning the lamp-keeper occupies himself during the day in walking leisurely through amongst the workmen, carrying some spare lamps with him to replace such as may happen to be extinguished. It is scarcely necessary to observe that the lamp-keeper's cabin is always placed in a secure part of the mine, as near the workings as circumstances will permit."

When Sir Humphrey Davy perceived that his lamp was being misunderstood, and that men as eminent as John Buddle, through mistaken zeal, were, so to speak, placing a chip on their shoulder and defying their old enemy, fire-damp, to knock it off, he at once arranged a visit to the mines. Here he demonstrated to a body of interested men what he had learned in his laboratory experiments. At Lambton colliery gas was brought by a pipe from a blower in the shaft to the power house. The gas was then mixed with air and a lamp exposed to the blast. In a short time the gauze got red-hot, flame was passed, and an explosion resulted. Thesedemonstrations of the unsafety of a safety-lamp impressed his hearers. Davy then suggested that a tin shield be always used on the lamp when in high velocities, and that on entering a body of gas the lamp be withdrawn before heating and the flame extinguished, not by blowing out, but by dipping into a vessel of water or by drawing down the wick.

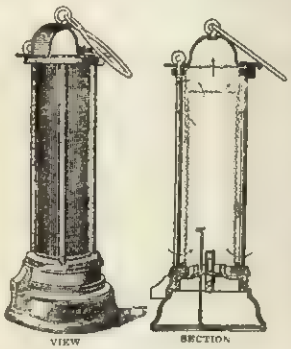

Fig. 5. Stephenson Lamp.

The general satisfaction with the Davy lamp, and also the Clanny and Stephenson lamps, which in their improved forms were as enthusiastically received as the Davy, was not lasting. The change from the insufficient candle to a lamp that gave off only 1/6 as much light created dissatisfaction amongst the men at the faces. Further, there was complaint that when the air current exceeded 6 feet per second the flame was puffed out. The official in charge of ventilation at one of the Earl of Durham's coal mines, in North England, had particular difficulty in keeping the lamp burning when passing through a narrow airway in which the velocity was about 2,400 feet per minute. He, therefore, ordered the lampman to make him a tin can of such diameter as would just allow the lamp to be placed therein, and directed that a glass pane be put on one side of the can, with a wire handle placed on top for carrying. When used in this form the official found that the flame was extinguished in an explosive mixture. When this peculiar behavior of the lamp became noised about it was duplicated in other collieries, and declared the safest arrangement known. The reason for extinguishing in gaseous mixtures was found to be the conflicting air currents in and about the lamp when the flame became elongated. On account of its appearance it was called the "Davy in a can," or "Tin can Davy." This contrivance was such a great step forward that there was no good reason why it should not be applied to the Clanny. Owing to the glass cylinder, however, the can was placed above it, and surrounded merely the gauze. On account of this change from the Davy can the name bonnet seemed to be more appropriate, and it was henceforth so-called.

Fig. 6. Davy in a Can.

There can be no doubt that many explosions resulted from the failure of Davy lamps to withstand conditions frequently found in mines. In 1885 it was proved before a Royal Commission that a greater number of lives had been lost in English mines during the 18 years succeeding the introduction of the Davy lamp than in the 18 years immediately preceding the invention, and, on the strength of so much unfavorable testimony, it was finally condemned as unsafe. It is interesting to note that John Buddle retained his admiration for the Davy, and, as its champion, wrote that, throughout the 20 or more years during which he used them in his collieries, he never had an explosion.

The Clanny and Geordy lamps were held in equal distrust with the Davy, and it was everywhere apparent that the magical influence which safety-lamps were supposed to have over gas had been overestimated. True, they were the safest measure as yet devised, but they were so lacking in desirable features as to almost counterbalance the good realized from them. Therefore, the problem of mine lighting, which apparently had been solved, and solved in finality, in 1815, reappeared to be almost as vexatious and elusive as of old.

Improved Types of Safety Lamps

As was to be expected, the shortcomings of the Davy, Clanny and Stephenson lamps were eagerly seized upon by those of inventive mind. It was understood from the experience already gained that a lamp to be generally satisfactory—the ideal lamp,

as it were—must have all of the following commendable features:

1. Light of greater and more uniform intensity.

2. Freedom from smoke or soot.

3. Greater safety and sensitiveness in presence of fire damp.

4. Use a cheap oil.

5. Have a fool proof lock.

6. Have an internal lighting arrangement.

Many lamps, in consequence, made their appearance, and most of them an equally rapid disappearance. In all of them was to be found an attempt to correct one or more of the defects in the prevailing types. Many ingenious lamps were placed on the market, but as they did not embrace all of the desirable features, the majority were short lived. To show the zeal with which men sought for betterment, it is on record that in 15 years 12 lamps were invented in England having for their sole object the prevention of danger from opening the lamp, being so contrived that the flame was extinguished when the oil vessel was unscrewed. Hot air feed, enameled metal reflectors, electro-silvered gauze, sheet-iron cylinder inside gauze, talc covers, mica cylinder instead of glass, etc., were all experimented with, and as many as seven patents taken out on a single feature.

While most of these features were worthless, the lessons learned in conducting the experiments proved of great value and many excellent lamps, such as the Muesler, Marsaut, Ashworth-Hepplewhite, Gray, Morgan, Evan Thomas, Clifford, etc., etc., were a result. However, none of these lamps satisfactorily solved the question of lamp oil, nor had they any internal lighting arrangement. The commonly used vegetable oils, such as colza and rape, were objected to on account of their tendency to incrust the wick in burning. This greatly dimmed the light, and it often became necessary for the miners to open their lamps to clean the wick. This objectionable tendency of the oil was helped somewhat by the addition of petroleum, but while it increased the illumination it likewise increased the tendency of the flame to smoke, and it was not a complete success.

Attention was directed to the locks with the view of making them more secure. It was known that in the mines the men would open their lamps to trim the wick and clean the globes, and to light their pipes, or to relight the lamp when extinguished. To obviate this dangerous practice, or rather the necessity for it, was required a lamp the lock of which could not be tampered with, a wick that did not smoke, and an arrangement for relighting the lamp when extinguished.

The Wolf lamp was undoubtedly the first to embrace all of these requirements. It is, in reality, an improvement on the Marsaut, which is in turn an improvement on the Clanny. It was first introduced into German coal mines in 1783, and at once attracted general attention in the coal districts of Europe. Two of the objectionable features in all preceding lamps had been overcome in the Wolf lamp, through the use of high volatile oil as the illuminant and a friction arrangement for the internal lighting of the lamp. Much unfavorable comment was made upon each of these innovations, especially upon the latter. It was thoroughly evident, however, by this time that there must be some arrangement provided for relighting lamps in mines without undue loss of time to the workmen and company.

Wolf lamps are used in nearly all German mines where safety-lamps are required, but never found much favor in England, being objected to on account of the use of high volatile oil, and because of the danger of placing in careless hands the privilege of relighting the lamp when extinguished.

The Wolf lamp, the illumination from which was far superior to that of other types of lamps, and which remedied much that was objectionable in safety-lamps, contributed greatly toward quieting the discontent wrought by the enforced use of safety-lamps. Indignation over their use had been steadily rising. Men complained principally about poor light and the danger from falls of roof which they were exposed to and could not detect. When the English Coal Mines Act of 1887 made the use of bonneted lamps compulsory, the colliers were especially incensed, claiming that it would shut off their view of the top, and expressed themselves as more than willing to take their chances with an open light rather than with a bonneted safety.

Increasing Dislike of Safety Lamps

There was also a suspicion gaining ground amongst the miners that safety-lamps were, in reality, not safe at all, and that many accidents could be attributed to the false confidence inspired by them. An incident occurred in Zwickau, Saxony, about 1865, which illustrated the distrust on the part of the miners. A lecturer had explained the principle of the safety-lamp to a large audience, and, to make his discourse perfectly clear, illustrated his remarks with experiments. He arranged a bell jar in plain view of all, and connected a rubber hose to a gas fixture. A lighted safety-lamp was set inside the jar and the gas turned into it. The lecturer explained that when sufficient gas had entered the jar an explosive mixture would be formed with the air, that the flame in the lamp would be elongated, and a long blue tip would be seen; then, on the addition of more gas, the whole interior of the gauzes would be filled with flame but, though the gauze might become red-hot, the flame could not possibly come to the outside and ignite the surrounding gas — all of which phenomena would be plainly visible through the transparent jar.

As was predicted, the lamp was filled with flame and the gauzes became red-hot; but the incorrigible flame communicated to the outside and ignited the gas. The lecturer was somewhat perplexed and repeated the experiment, with the same result. In his embarrassment he admitted his inability to explain this unexpected phenomena, but presumed that it must be due to an imperfection in putting the lamp together.

Previous to this lecture a disastrous accident had occurred in the fiery mines of Zwickau in spite of the use of safety-lamps. There were those who now used the results of the lecturer's demonstrations to explain the disaster. A test was then publicly made upon 60 lamps of various makes, and of those tested only two would retain the flame.

The incident at Zwickau made a great impression on the mining men of the United States. A call was made by mine officials that all safety-lamps be tested, in the belief that much good would result from knowing whether safety-lamps were actually as safe as believed to be. Furthermore, in the anthracite region of Pennsylvania, attention was directed to the successful use of the "eternal lamp" at Zwickau, in the hope that it would be experimented upon.

At additional distrust arose in the minds of some that, because of the use of safety-lamps, the importance of ventilation would be lost sight of. This is emphasized in the letter of William S. Jones, inspector of coal mines, found in Pennsylvania Inspector's Report of Anthracite Mines, 1878, as follows:

"The practice of working with the safety-lamp is wrong. It is not a safety-lamp, as the sad experience of thousands fully attests. * * * * Is it right, I ask in the name of suffering humanity, to work a colliery with hundreds of men and boys when the air of the whole mine is so near its explosive point as to necessitate the universal use of the safety-lamp? Are we not taking too great a risk when we compel our fellow men to work in air that will not permit the use of naked lights? Is the flimsy gauze of the safety-lamp not indefinitely too unsafe as a barrier or defense for precious lives against the deadly and relentless foe Is it not high time for mining engineers to take a radical step forward, and to demand that the safety-lamp, as a means to provide light to work by, shall be discarded at once and forever, and that all operators shall be compelled to provide a sufficient quantity of pure air to dilute the gas and make the atmosphere of the mine absolutely non-explosive?"

He goes on to recite the pitiful conditions in England, Wales and on the Continent, where the ventilation is so sluggish that the gauzes are constantly red-hot from the burning gas inside of them. This, he argues by way of illustration, because there is constantly given off 1,000 cubic feet per minute with only 15,000 cubic feet of air per minute to dilute it. He adds:

"The proper thing to do would be to double the quantity of air so as to make it perfectly safe to work with open lights. We would then have 30,000 cubic feet of air to 1,000 cubic feet of gas, and an explosion would be an utter impossibility. I may be alone in holding the opinion that the safety-lamp was never intended as a means to provide a light to work by, and that it is only adapted to the purpose of testing the condition of the atmosphere in mines as the works are extended; that it is adapted only to find the danger, and not to work in it, for it does not remove the danger, and cannot remove it. * * * * I further hold that the defense of the safety-lamp, as a proper means to light our coal mines, is an unmitigated disgrace to the boasted civilization and scientific intelligence of the nineteenth century."

It might be added that the Davy lamp is doubtless the one referred to by Inspector Jones, as the miners in the anthracite region obstinately clung to the Davy, for the only apparent reasons that it was light in weight and that their fathers had used it before them.

With the continuance of mine catastrophies grew the feeling that, great as has been the purpose and benefit of the oil safety-lamp as a minimizer of danger, it has, in the broader sense, never been a complete success from the day of its invention. With almost a century of experiments and improvements upon it, it has failed to provide absolute safety against fire-damp; it has failed to provide sufficient illumination; it has caused a large number of accidents through inability of the workmen to see dangerous conditions of roof and sides; it has bred discontent amongst men because of their capacity for labor being diminished, likewise among mine owners, due to the decreased efficiency of both day and contract labor. It has militated against the facility with which labor may be procured—the open light mine is always more attractive to labor than the oil safety-lamp mine. It is heavy, and the light cannot be directed where needed. As a means for detecting gas, however, the oil safety-lamp remains the standard for fire bosses' use.

Safety Lamp Gauzes

Heretofore three metals have been used for flame lamp gauzes—namely, steel, brass and copper. While each of these has the requisite qualities to some extent, none of them is an ideal gauze material. Copper gauzes lack mechanical strength, especially after they have been heated; brass and copper both have comparatively low melting points, so that before the gas ignition is reached the gauze metal is attacked and oxidized under the action of heat. Steel corrodes readily in damp atmospheres, and if the lamp stands unused under these conditions for some time, the gauzes become unfit for service. Tests of these three materials have shown that steel offers the highest degree of safety.*

From time to time it has been suggested that Monel metal should be a better gauze material than steel since gauzes made of this alloy should have all the good qualities that steel gauzes possess and, in addition, would not corrode appreciably in ordinary mine atmospheres. As a result of comparative tests made, conclusions have been drawn as follows:† The investigation showed that Monel metal is a very satisfactory material for flame lamp gauzes. Monel metal gauzes provide as great a degree of safety as do steel gauzes, and, in addition,

*Ilsley, L. C. and Hooker, A. B. Technical Paper 228, Bureau of Mines.

†Hooker, A. B. and Kearns, R. A. Report on Investigations, Bureau of Mines.

they do not corrode perceptibly in humid atmospheres. Monel metal gauzes maintained their shape and stiffness under the greatest heat to which they were subjected in gaseous mixtures equally as well as steel gauzes did; this, together with the fact that they do not corrode perceptibly in humid atmospheres, should assure a much longer life for Monel metal gauzes. It is believed that the use of Monel metal gauzes in flame safety lamps would be a step toward greater safety, and that their use should be encouraged.

The Electric Lamp

Many attempts to devise a reliable portable electric lamp for miners' use have been made by inventors, the first of which was probably in 1883. It was apparent that a practical lamp would have many advantages over the oil lamp.

But the first electric lamps all had two common defects; First, they were too heavy, and, second, they used a liquid electrolyte, which proved undesirable for several reasons. A portable lamp is necessarily composed of two parts, the battery which furnishes the current, and the bulb. The latter was quickly brought to a high perfection; the former became the troublesome element.

The Sussman electric lamp was the first to receive favorable notice in England, and was introduced about 1894. Instead of a liquid electrolyte, paper paste, impregnated with sulphuric acid was used, the total weight being 4¼ pounds. The illumination is twice that of a safety-lamp. Several thousand of these lamps were employed in English and Belgian collieries in 1904, the Bracquegnies colliery, Belgium, being reported as using 2,000 of them, and an English colliery 1,400. The cost of the lamp, including all repairs and renewals of the incandescent filament, was found to be ¼ cent per day of 12 hours. The life of the lamp was stated as five years. It is charged by connecting the battery to the wires of a dynamo for nine hours, the current for charging not exceeding eight amperes. At an English pit a record of the lamp's performance was kept for one month, and showed that, out of 504 lamps in use, an average of 96.73 per cent completed the shift, the remainder being rendered unusable from various causes.

The Neu-Catrice, another miners' lamp, was used at the Bruay collieries, France, and the Float lamp was introduced in Wales.

In the United States electricity as a lighting medium also received much attention. In 1896 it was suggested that arc lights be used in headings in place of incandescent lamps, and that the light be reflected so as to light the face. In 1901 the Pennsylvania legislature seriously considered making it compulsory for all mine owners to electrically light the entire inside of the mine.

Electric lamps were placed on the market in 1902, but, on account of the objections common to all the earlier types, were not favorably received. Early types were experimented with by the Philadelphia & Reading Coal & Iron Company, the Lehigh Coal & Navigation Company, and the Lehigh Valley Coal Company in the East, and the Colorado Fuel & Iron Company in the West.

None of the early experimental lamps proved successful. One of the principal difficulties lay in the inefficient carbon filament bulb which required a storage battery of too considerable a weight to be carried on the body with comfort. It was also soon demonstrated that the leakage of acid was a serious problem, as it was impossible to prevent the acid from creeping out around the cell connections and vent plug when used in a stooping position or running. It attacked every metallic part of the battery with which it came in contact, destroyed the men's clothing and even burned the bodies of the workmen.

In 1909 the Tungsten miniature lamps were first placed on the market in America for limited or special commercial uses. The efficiency, or watts per candle, was about three to four times better than the carbon lamp. The effect of this improvement was to stimulate the search for a battery of sufficient lightness to enable it to be worn about the body.

The next two years were given to testing and developing lamps under actual working conditions and in trying to overcome the obstacles usually associated with the introduction of a novelty. Fully a dozen makers devised lamps during this period, the foremost cap lamp being the Hirsch, while the Ceag was the best known of the hand type.

In March 1911 Thomas Edison became interested in the development of a practical miners' lamp and in May 1912 the first lamps made by the Edison Storage Battery Company were tried out in the mines of the Philadelphia and Reading Coal and Iron Company. Concurrently the Wico lamp was introduced and tried out by the same company.

During the latter part of 1913 the Bureau of Mines, through H. H. Clark, became interested in the electric cap lamp, and after a personal tour of inspection and investigation at the Reading Company's mines, took up the work with the view of standardizing its various features. Their chief concern was safety, thus making the lamp acceptable for general mine use. All available makes were studied and tested, and as a result a schedule of official tests was prepared which were used in establishing a list of permissible safety lamps for use in mining. This step was the means of bringing home to the manufacturers the realization that the electric cap lamp was here to stay and created not a little competition to produce the best lamp possible.

Today we find the cap lamp comprising a non spillable battery mechanically protected by an aluminum or steel case having the cover locked and arranged to be carried on a belt, a special twin flexible conductor conveying the current from the battery to the lamp on the cap, encased for a short distance at both ends by flexible steel armor, serving as an anchor and preventing sharp bending. The lamp consists of a parabolic reflector equipped

with safety features, in which is mounted a tungsten lamp, the opening supporting a glass lens cushioned on gaskets held in place by a cap or spring, and provided with a hook to fit into the miner's cap.

When wearing the outfit a man can put himself in any position without restraint. It does not interfere with free motion of the body in any direction. He can use all tools and perform any desired work with as much freedom as when wearing the oil cap lamp.

Special combination charging stations are provided with facilities for charging, cleaning and filling both the electric lamps and the oil safety lamps.

The electric cap lamp has fully passed the development stage though improvements will doubtless continue, thus bringing it to a higher degree of perfection as the requirements are better understood and appreciated by the users.*

Advantages of Electric Cap Lamps

The advantages to be gained in the use of the electric cap lamp, approved by the United States Bureau of Mines as "permissible" for use in gaseous mines, are enumerated by the Bureau of Mines, as follows:

(1) It reduces, to the lowest possible, the hazard of gas explosions.

(2) It reduces the danger of getting burned by lighting gas which may accumulate from a feeder found by drilling a hole.

(3) It reduces the possibility of a serious dust explosion which may easily start by an open light igniting a little pocket of gas.

(4) It reduces the great danger of mine fires which are so frequent in mines, due to setting off a gas feeer at the face of the advancing narrow work in nearly all mines.

(5) It reduces accidents from handling explosives in the magazine, also during transportation and preparing shots at the face, etc.

(6) It gives a much greater chance for a miner to escape for his life after a local explosion or through smoke from a fire due to having a light to travel by.

(7) Reduces accident to drivers, motormen, rope-riders and shotfirers, as the electric light is more dependable against any velocity of the air-current, windy shots, etc.

The electric hand lamp differs from the cap lamp only in detail. The battery and bulb are brought together into one unit and thus the cord is eliminated. As with the oil safety lamp it is carried by means of a bale and when at the working face can be hung on a post conveniently close to the workings. While the weight of the hand lamp is frequently cited as an objection it must be borne in mind that this weight is not continually carried as is the case with the cap lamp.

Lighting of Non-Gaseous Mines

The lighting of non-gaseous mines has never presented any great difficulties; but, as with the users of safety-lamps, men obliged to labor underground have ever been in search of better light. The greatest objection to open oil lights has been the great amount of smoke or soot given off. The oils used in the anthracite regions in the earlier days were sperm oil, whale oil, seal oil, cotton-seed oil and lard oil. These afforded good light, but it was soon discovered that the addition of kerosene increased the illumination, and the miners dubbed this self-made mixture "the World's Light."

Manufacturers were quick to notice the demand for an adulterated oil, and at once placed such oils on the market under fantastic names, such as "Electric Miner's Oil," "New Era," "Wildfire Jack," etc., all of which were labelled "safe," "non-explosive," "economical," etc. Drivers began the use of "black strap," which gave off an immense amount of smoke, or else burned nothing but kerosene, which possessed an additional advantage in that it seldom blew out and left them in the dark.

The attention of mine inspectors was early called to these pernicious practices, and the use of adulterated oils finally became so great a menace to life and health in Pennsylvania, and in all coal mining states, that legislatures have passed bills defining the quality of miners' oil to be used. In spite of this, however, violations of the law have been frequent, and the prevailing dissatisfaction has resulted in the appearance and use of the acetylene lamp.

The Acetylene Lamp

Acetylene gas was accidently discovered in 1836 by Professor E. Davy, of Dublin; but not until 1892 was it produced at a commercially cheap rate. It was likewise accidentally discovered by H. Moissay, who, while conducting experiments with an electric furnace, noticed that the wall of the furnace, consisting of lime, fused into a liquid state at 3,000 degrees, Centigrade, and that a combination between it and the carbon of an electrode produced calcium carbide. T. L. Wilson, by accident also, and while experimenting with an electric furnace, discovered a method which resulted in the manufacture of calcium carbide on a large scale.

Carbide lamps are too well known to require description. In the short space of twenty years their use has extended into all states and countries, largely displacing the oil cap lamp of the coal miner and the candle of the metal miner. As a means for lighting in non-gaseous mines, the carbide lamp has the following advantages over the oil or candle light:

*For a very interesting account of the development of the electric cap lamp in America, see paper by J. T. Jennings, "Historical Development of the Miners' Electric Safety Cap Lamp," Proceedings Coal Mining Institute of America, 1914, and which has been drawn upon in this article.

1. Produces no carbon monoxide.

2. Produces 1/10 the amount of carbon dioxide, and 1/13 the amount of water vapor that an equal amount of candles would produce.

3. Consumes only 1/5 as much oxygen.

4. Gives a 4 to 6-candlepower light.

5. Will serve, if properly used, as an indicator of black damp. It has been fully proved that the flame of the carbide lamp does not require as much oxygen for the support of combustion as is needed for the flame of an oil lamp or a candle. The flame of an oil-burning lamp goes out when the atmosphere surrounding it contains 17 or 17½ per cent of oxygen, whereas an acetylene flame does not go out until the atmosphere contains only about 12 to 13 per cent oxygen. The miner upon entering a place where black damp exists will find the flame of his carbide lamp burning yellow and turning upward, also that if he advances farther the flame is put out. As soon as this indication is noticed the miner should withdraw, otherwise he may be overcome and lose his life.

The disadvantages of the carbide lamp are minor ones and have never affected its popularity. Due to irregularity of water feed at times they require considerable attention to keep the flame burning brightly. Objection to the odor is overcome in some mines by providing receptacles for the collection of spent carbide. The early impression that the fumes of carbide were injurious to sight and health have been proved to be unfounded.

Carbide Safety Lamps

Carbide was naturally siezed upon as a substitute for oil in safety-lamps, and safe and efficient acetylene safety-lamps have been introduced. The flame is 10 candlepower. With one per cent of methane, a clear, blue cap is shown, which increases as the percentage of gas is increased until, at 3¾ per cent, there is a well-defined cone.

The objections to this lamp have been stated as:

First—The increased weight.

Second—It needs additional carbide and water to burn through a shift.

Third—It gets hot when stationary.

Fourth—It requires more attention at the hands of the user than an oil lamp.

In intelligent hands this lamp can be used successfully and an excellent light is afforded, which amply compensates the disadvantages.

MINE CAR SECTION

SECTION XV

FOR INDEX TO ALL ENGINEERING DATA SEE PAGE 10.

THE FOLLOWING MANUFACTURERS AND DEALERS ARE REPRESENTED IN THIS SECTION

American Car & Foundry Co.
American Chain Co., Inc.
Baker Car Co.
Brown Equipment Co.
Card, C. S., Iron Works Co.
Duncan Fdry. & Machine Works
Enterprise Wheel & Car Corp.
Fleming, J. R., & Son Co., Inc.
Fulton Pit Car Co.
Gustafson Mfg. Co.
Helmick Foundry-Machine Co.
Hockensmith Wheel & Mine Car Co.
Hyatt Roller Bearing Co.
Irwin Foundry & Mine Car Co.
Kanawha Mfg. Co.
Lincoln Steel & Forge Co.
Lobdell Car Wheel Co.
Ogden Iron Works Co.
Ottumwa Iron Works
Phillips Mine & Mill Supply Co.
Pittsburgh Boiler & Machine Co.
Pittsburgh Knife & Forge Co.
Pressed Steel Car Co.
Sanford-Day Iron Works.
Southern Wheel Co.
Suppes Forge & Foundry Co.
Timken Roller Bearing Co.
Watt Mining Car Wheel Co.
Young Car Co.

FOR LIST OF EQUIPMENT USED IN COAL MINING SEE PRODUCTS INDEX (Blue Sheets)

MINE CARS

(For illustrations of Mine Cars, Wheels, Axles, Bearings, Etc., see the Catalog pages which follow.)

The car is the universally adopted medium for conveying the coal from the working places to the surface. As might be expected, owing to the multitudinous conditions encountered in mining, cars vary greatly in construction and in details. Height of seam, bad top, heaving bottom, quality and use of coal, methods of payment for coal loaded, dimensions of shaft, etc., all exercise an influence on car design.

Before a definite selection of equipment is made every consideration should be given to the many aspects having a most important economic bearing on the successful working of the property. The size of the car, its dimensions, its shape, the materials entering into its construction, kind of wheel, bearing, axle, the choice between a tight end and an open end car, lubrication, etc., all have an influence on the selection of a proper car.

With mine cars, as in track work, we can find much to sustain the charge that no standardization is in evidence. The head of one important manufacturing concern states that they have in their shop-files over 2000 drawings of mine cars of different patterns and varying in size and dimensions. The statement is further made that they never yet, in their experience, have built identically the same car for any two companies.† Other concerns, being heard from, would make the situation still more astounding. This causes one to wonder whether there is great dissimilarity between all mines operating in the same seam in a given locality. Ample testimony to the contrary can be had. While it is admitted that a car of given size and shape may not be suitable to each of two mines operating in different seams and under different mining conditions, yet the fact remains that in many localities (the Fairmont-Clarksburg region of West Virginia for instance) the same general type of car prevails though there is a wide variation in dimensions and details. Uniformity of conditions here, as frequently elsewhere, are favorable to standardization. If one corporation can adopt a standard car for all its mines, as is sometimes done, it may be construed as an argument that neighboring mines might possibly use a wagon identically the same.

In this section there will be discussed in a general way the principles which govern the selection of the many details which enter into the construction of a complete mine car.

Historical

The carrying of coal in sacks has already been mentioned as the earliest recorded means of conveyance.‡ An improved mode of movement was by tubs, or corves. Boys and women were engaged in the work of conveying the coal from the face to the shaft. They crept on their feet and one hand, dragging the tub along with the other hand—an extremely arduous task. "Women were dressed as boys, in trousers, crawling on all fours, with belts round their waists and chains passing between their legs."§

Female labor continued until 1842 when to the chagrin of many of the operators, who freely predicted the ruination of the industry, their employment underground was prohibited by an act of Parliament. With the advent of metal rails, tubs gave way to wagons fitted with four wheels and which served as the prototype of our modern mine car.

Materials of Construction

Mine cars are built of wood and steel. Cars built of steel with wood replacing some of the steel parts are known as composite types.

Wood

White oak is chiefly used, the bottom boards being usually 3″ thick, the side, flare, door, and end boards 1½″ thick. There is considerable deviation from these dimensions, bottom boards alone varying from 2″ to 4″. The attractiveness of the wooden car lies in its cheapness, lack of stiffness in riding, and the ease with which repairs can be made using unskilled labor. In many localities where lumber and labor is cheap, wooden cars are built in the mine shops, the iron parts, trucks, etc., being supplied by the manufacturer.

Steel

The superiority of the steel car is being generally recognized and it is gradually supplanting wood. Its advantages are: (1) with the same dimensions as a wood car it will hold 10% to 20% more coal, or, in low seams, it may be cut down 4″ to 6″ in height and hold the same amount. In this latter event it (2) requires less muscular effort to load; (3) the cost of maintenance is less; (4) it withstands shocks and survives wrecks that would smash a wooden car; (5) owing to its stiffness it does not droop at the ends like a wooden car; (6) it makes a tighter car and minimizes the loss of fine coal in transit.

Balanced against these desirable features are its higher cost, about 40% more than a wood car; its lack of flexibility in riding; corrosion of the steel; the difficulty in making repairs and the skilled labor required in such work.

The steel plates used for the sides may be in one piece bent to the shape of the car, or in sections fastened together with bolts or rivets. The object in the use of bolts is to facilitate the detachment of any damaged portion and the subsequent replacement after straightening. When rivets are used a damaged car is straightened by heating with blow torches and hammering, or else by the use of rail benders and jacks. At some mines a crib or cage of ties is built, just large enough to admit a car which is straightened by means of jacks placed between the crib and the car, and acting in opposite directions. Often, even when the straightening has been carefully done, trouble is had with the

†Coal Age, Vol. 8, pg. 24.
‡See Mine Track Section.
§Report of Royal Commission.

closing of the end gate, since the alignment is never quite the same as before the accident. Here it may be observed that tight end cars offer an undoubted advantage since any imperfection in alignment would not be noticed with a rotary dump.

Composite Cars

The use of steel bottoms has, in many instances, been found objectionable owing to the rapid corrosion which sets in, and which is here more noticeable than on the sides. In place of steel, therefore, wood may be specified. Such a composite type costs less than the all-steel car, though 25% to 30% more than a wood car. Besides increasing the durability of the bottom, it is less stiff and rigid than the all-steel car, and usually less expensive to keep in repair.

Size of Mine Cars

The American mine car greatly exceeds in size that used in England and Continental Europe, where, owing to the working of thin seams, the dimensions of the car are necessarily restricted. Many of the cars in use hold as little as 800 pounds of coal, the preferable size carrying 12 to 14 cwts. This compares with the large cars found in the anthracite regions, and even in the bituminous fields, where cars holding as much as 8000 pounds are used.

It has already been stated in the discussion of Mine Tracks that the thickness of the seam limits the height of the car; the width of the entry, dependent upon the condition of top and bottom, limits its width, while the allowable wheel base governs the length. Given a low seam with good top a car of great breadth may be used, but here we are confronted with a difficulty in construction, i. e., making strong the sides of the car overhanging the wheels. Increasing the gage decreases the overhang but this involves an additional money outlay in track construction. Greater length of car may be attained by increasing the wheel base beyond 28" or 32", as generally found, but the hesitation here is due to the difficulty in replacing derailed cars, and the large radii necessary to provide a smooth movement between tangents.

The remaining variable is the height of car. In general practice this is directly proportional to the height of the seam, cars used in the Pittsburg seam running as high as 52" above the rail, while in the low seams cars half this height are used. While conditions will be such that there is little choice to the height of car in low seams, the question may well be asked, what is the desirable height in a thick seam?

In seeking an answer, increasing consideration is being given by engineers to the researches of men like Poncelett, Morin, Rankine, Taylor, and others, who have conducted careful investigations to determine the muscular energy of men. The data here given is of interest to the loading of coal:

Nature of Work.	Weight Moved or Resistance Overcome in Pounds.	Velocity of Movement, Ft. Per Sec.	Work Done Per Sec. Ft.—Lbs.	Time of Working, Hours Per Day	Work Done Per Day Ft.—Lbs.
Shoveling Up Earth; Lift 5 Ft., 3 in.	6	1.3	7.8	10	280,800

"The work of Dr. F. W. Taylor shows that a maximum amount of shoveling may be accomplished by the use of a shovel taking up a load of 22 lbs.; also that by the introduction of rest periods at stated intervals (determined from a study of the particular task) the amount of work done in a day by a laborer may be greatly increased over the figure given."*

Accepting the figure given, 280,800, as the work in foot pounds possible to be done per day, let us apply this to the task of loading coal into two cars having heights of 52" and 32" respectively above the rails, adding 6" in both cases for clearance. The number of pounds of coal shoveled in the first instance in a day of ten hours would be 280,800÷4.833 feet=58,100 lbs., or about 29 tons. In the case of the low car we have 280,800÷3.167 feet=88,664 lbs., or about 44 tons. The meaning of this then is that with the low car, the average man can load 44 tons of coal per day with the same muscular effort as required to load 29 tons into the high car. The difference, of 15 tons, represents the disadvantage to both mine owner and coal loader in having a car of excessive height. The fact that the tonnage figures mentioned are not reached in the mine does not alter the percentage in favor of the low car. That the advantage in their favor is not fanciful is indicated by the specifications of several large producers, who, with the privileges accruing from mining a thick seam, yet stipulate that the height of car top above the rail shall not exceed 32 inches. As might be reasonably expected, their experience has shown that the laborer realizes the advantage of the lower car and will willingly load more coal in a lower car at the same price than they will in a higher one. In addition there is less breakage to the coal, a point of considerable importance in most localities. With low cars equilibrim is more stable as the center of gravity is low.

Assuming then the selection of a low car, a large capacity can be obtained only by increasing the length and the breadth. If the inside length of the car be extended to 10 feet, which would appear to be a desirable maximum owing to the throw of the coal in loading, the wheel base will also need to be increased. In some mines this now amounts to 48 inches. With such a length not only are easy curves necessary, but, moreover, every precaution must be taken to keep the track and rolling stock in good repair so that derailments will be few. The maximum breadth to a car, assuming favorable external conditions, would appear to be about 6'-6", the overhang with a 48" gage being about 16 inches. A car with the following dimensions, 10 feet inside length, 6'-6" in breadth, and 32" in heighth above the rail would have a capacity of about 100 cubic feet, or 2½ tons of coal level full. By careful topping an extra ton could be added.

A division of opinion exists respecting the merits of large mine cars. Those opposed point to the excessive weight, the loss of time when derailments occur, the difficulty men have in placing them to the face, the need of heavier rails, ties, spikes, etc., and the higher initial cost. Those, contrary-minded, bring forth proof to show that

*See Mark's Mechanical Engineers' Handbook, pg. 868.

even though the large unit is heavier, the improvement in wheels, axles and bearings makes it easier running than the light cars of yester year, that derailments are due to carelessness in construction and maintenance of tracks and can be largely avoided, that in most mines cars are hauled to the working places by animal or mechanical power, and that the higher initial investment is more than offset by the increased daily tonnage. It is beyond question that in many of the details connected with the delivery of the car from the working place to the tipple, and its return, the same time and effort is required with the small car as with the large. A survey of the field indicates that the trend is toward the larger car, the probable limit being from 3 to 5 tons of coal carried.

It is plainly true that the car which shows the greatest ratio of useful weight (coal carried) to tare (car weight) will be the most economical in power used, everything else being equal. *Kerr states that a "tub to hold 10 to 12 cwts. should not weigh more than 4 cwts., if constructed of wood, or 5 cwts., if of iron." The ratio here on a basis of 100 pounds is about 72 to 28, and refers to small cars. The statement has many times been made that large cars show a more favorable ratio in this respect than small ones, a statement hardly borne out in practice.

The table following shows the ratio obtaining between cars of light weight, medium weight, and heavy weight. All of the figures on light cars, and the first two given under medium weight are taken from Bulletins of the Illinois Coal Mining Investigation by S. O. Andros. The tare on the remaining cars has been given by the manufacturers; the weight of coal has been either figured from the cubical contents, or from capacities as given by the manufacturer, with an allowance of 20% for topping. This allowance is, in many cases, insufficient since cars of 77 cubic feet capacity, rated at 2 tons, are sometimes loaded with from 3 to 3½ tons of coal, and cars rated at 1¼ ton may by careful topping be loaded to 2 tons. While the ratios in the case of medium and heavy weight cars are, therefore, in all probability too low, it will nevertheless be seen, after making allowances, that no great difference exists.

Tare.	Capacity of Cars In Lbs.	Ratio Of Coal To Tare.
	Light Cars	
800	2000	72—28
900	3000	77—23
1000	4200	80—20
1100	2600	70—30
1200	2600	68—32
1300	4200	76—24
1400	3000	68—32
1500	3500	70—30
1600	3000	65—35
1700	5000	75—25
1750	5600	76—24
1900	4000	68—32
2000	5000	72—28
Average ratio		72—28
	Medium Cars	
2200	6000	73—27
2400	6000	71—29
2525	4000	61—39
2665	4800	64—36
2850	4800	63—37
Average ratio		66—34
	Heavy Cars	
3240	6500	67—33
3330	6000	65—35
3500	6500	65—35
3700	8000	68—32
3780	6750	64—36
Average ratio		66—34

The failure of the large cars to show any advantage is due to the use of steel in place of the lighter wood, the use of heavier wheels and axles, draft gear, etc., all of which add greatly to the dead weight carried.

How to Figure the Capacity of a Mine Car

The prevailing cars in the bituminous mines are either of the single flare or double flare type as shown in Figure 1.

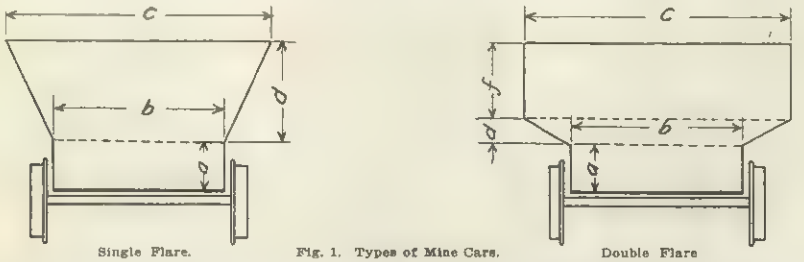

Fig. 1. Types of Mine Cars.

The first step is to find the cross sectional area. Assuming first the car with a single flare, the area can be divided into two parts as shown by the dotted line, the lower part having the form of a rectangle and the upper part that of a trapezoid. All dimensions are to be given in feet.

The area of the rectangle = a x b

The area of the trapezoid = $\frac{b+c}{2} \times d$

Total area of cross section = $(a \times b) + \left(\frac{b+c}{2} \times d\right)$

Multiplying this expression by L, the inside length of the car, in feet, we have,

*Practical Coal Mining, pg. 736.

$$\text{Cubical contents} = L\left[(a \times b) + \left(\frac{b+c}{2} \times d\right)\right]$$

In the case of the double flare car we have a cross section made up of two rectangles with a trapezoid between.

Area of bottom rectangle $= a \times b$

$$\text{Area of trapezoid} = \frac{b+c}{2} \times d$$

Area of top rectangle $= c \times f$

Total area of cross section $=$

$$(a \times b) + \left(\frac{b+c}{2} \times d\right) + (c \times f)$$

Multiplying this expression, as before, by L, the inside length, we have,

$$\text{Cubical contents} = L\left[(a \times b) + \left(\frac{b+c}{2} \times d\right) + (c \times f)\right]$$

To find the number of pounds in the car when struck level, multiply the cubical contents by 50, the number of pounds in a cubic foot of loose coal.

The car used in the anthracite regions is usually box shaped, the cross section being a rectangle. The content is therefore, very simply found.

Referring to Figure 1, the illustration of the double flare car, the breadth of car at bottom, b, is usually taken 6″ less than the gage of track, while the depth, a, is taken as one-half the diameter of the wheel.

See Inquiry Form for Mine Cars in this Section.

End Gates and Fastenings

To provide a means of egress for the coal from the car while dumping, an end gate is fixed to the forward end. This is swung by from two to four straps on a bar, which latter serves also to support the car sides at the weak end. Before loading the car, the end gate is latched by the loader, a few of the many devices for accomplishing this being shown in Figure 2. The requirements for a good latch are that it shall be so simple that its operation may be easily understood; that it be so constructed as to stand constant rough usage; that it shall not become unfastened through jolting or derailment of cars on haulage ways; and that it be quickly and easily unlatched on the car dump.

Many of the devices employed have failings in one or more particulars. Latches which are close fitting at the beginning may soon fail through the distortion of the car sides; those consisting of a hook fastened to a chain may fail through the breakage of the chain; those made up of long bars may fail through the bending of the bar and its failure to engage securely both of the side lugs. Because of such difficulties the loader may resort to the driving of wooden wedges to fasten the latch in place, causing exasperating delays on the tipple.

The lift gate has had a rapidly increasing use, and is the standard for use at shaft mines having self-dumping cages. Its superiority over the swing gate lies in its being less liable to come open in the course of travel. It is only when the bolt fastening the straps extending from the end gate to the sides of the car becomes lost that this may happen, and not through excessive jolting on the haulways.

It is true of all end gates, no matter what type of fastening is used, that the open space between the end gate and the car sides permits the leakage of fine coal on the haulway. This in time is ground fine by the passage of cars and the travelling of men and animals and constitutes an additional element of danger in mining, inasmuch as this fine dust is carried about by the air current and would be a powerful aid in the propagation of an explosion.

Wagons With Tight Ends (Solid Body Cars)

The presence of an end gate makes it impossible to have in the front the same strength and rigidity as found in the rear of the car. Since the sides in front are reinforced at the top only by the bar on which the end gate is hung, the front binder belt must be mainly relied upon to resist the strains encountered in the rough service to which all car equipment is subjected. In time the insufficiency of this support permits the spread of the sides and causes an ill fit with the end gate. Fine coal is dribbled along the roadways. The end gate boards become broken, and in this way, or by accidental opening in transit, enough coal may be spilled to cause a wreck. In order to prevent such an occurence a constant oversight must be exercised and the end gate and fastenings kept in good repair. During the necessary repair periods such cars are taken off the haulways and the mine is handicapped by the loss of so much rolling stock.

Cars with closed ends are free from these drawbacks. The ends being rigid and connected throughout their depth to the car sides, there is

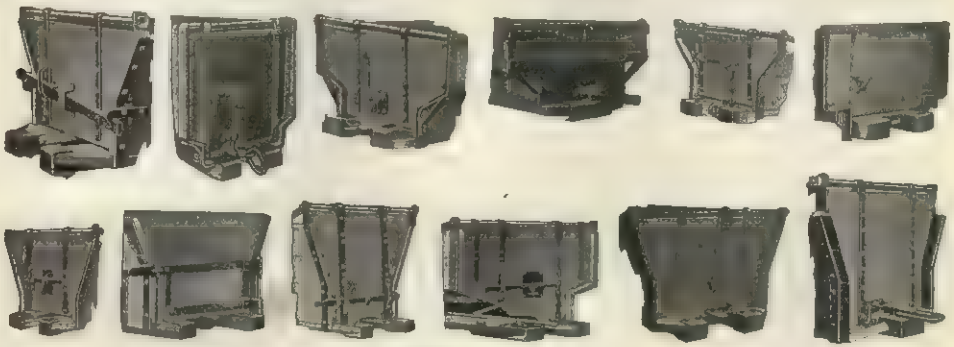

Fig. 2. Latches Used on End Gates.

presented the strongest possible construction. All danger of accidental opening of end gate is removed, no fine coal can be spilled on the haulages, the loader is always assured of correct weight on the tipple, the item of gate repairs is completely wiped out, and more cars, therefore, are available for daily service. An additional reason which should carry much weight with the industry is that a car with tight ends can be manufactured at less cost than the end-gate type.

The reason for indifference to the economy in the use of the closed-end type of car in drift mines is doubtless due to the fact that a special type of dump, the rotary, is required for unloading the mine car. This style of dump will be fully treated in the Tipple Section, but it may be stated here that dumps of this type, operated either by motor or by gravity, are on the market and are giving entire satisfaction. It is a safe prediction that the tight-end wagon and the rotary dump will win a gradual ascendancy in American mining practice.

Wagons With Drop Bottoms

Cars having drop bottoms, consisting of two doors hinged at the car side and closing on the longitudinal center line of the car, are frequently used where trips are brought out of the mine by a rope, the coal being emptied directly into a bin by releasing the bottom. Cars of this description are fairly common in the coke regions of Pennsylvania where they can be used to particular advantage because with the usual lengthy bin designed to hold a day's charge for the ovens, the long trip of cars can be brought to a stop at any desired point and the bin filled uniformly without the necessity of chain and sprocket driven levellers. Closing of the doors is effected by the winding up of a chain attached to the bottoms, or it may be so arranged that closing is done automatically as the cars are being moved from the tipple.

A new design of drop bottom cars has been developed in the past few years which, it is claimed, revolutionizes the results to be obtained from the use of this type of car. This car has three curved steel doors which lap each other. The locking of the left-hand door locks all three doors. The capacity of the car is largely increased over the ordinary car by means of getting extra capacity below the floor line of the end dump car. The sides are made of steel channels which the curved doors fit snugly, thus making leakage, it is claimed, less than in the ordinary wood car. If the latch is pulled unintentionally, only the end door is released, and it can not drop far enough to release the other doors. The bottom doors are short flanged and curved steel plates of very stiff and permanent construction. No chains are employed in holding up the bottom doors and the processes of discharging the contents and closing the doors are done at the rate of 20 to 25 cars per minute and entirely automatically. The bin under the car is levelled off automatically, even though all the car dumping levers are tripped at one point.

Drawbars

Drawbars are found on all cars not equipped with spring bumpers, or drawheads. With cars having side bumpers the style shown in Figure 3 is used. For cars having center bumpers some provision must be made to provide room for the insertion of the coupling link. This is effected by an offset at the ends, as shown in the figure.

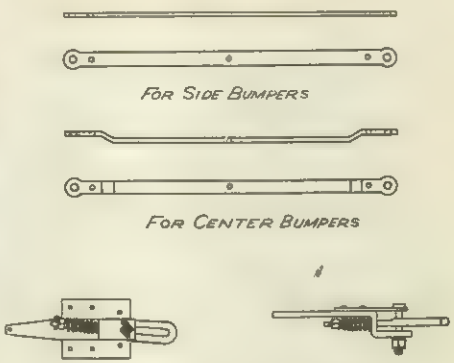

Fig 3. Styles of Drawbars In Use.

The spring draw bar, also shown, overcomes the disadvantage of the spring drawhead, inasmuch as it adds no additional weight to the car, and is furthermore, inexpensive. It can be used with either side or center bumper cars. Its utility lies in the absorption of shock and a greater smoothness of operation. It can be applied to old mine cars in use by merely welding the new end to the old draw bar, making no further change in the construction of the car.

Drawbars vary in width from 4" to 5" and are usually $\frac{5}{8}$", $\frac{3}{4}$", 1", or $1\frac{1}{4}$" in thickness. They are connected to the car bottom by $\frac{3}{4}$" rivets, in the case of a steel bottom, or by $\frac{3}{4}$" bolts in the case of a wooden bottom.

Bumpers

Mine car bumpers are of two kinds, those consisting of two projections beyond the car, one at each side of the drawbar, and known as side bumpers, and second, where there is but one projection beyond the car, known as the center bumper. Modifications of both types are shown in Figure 4.

Side bumpers require long chain couplings. In passing around sharp curves there is always danger that the bumpers will inter-lock and cause derailment. Center bumpers here show to a great advantage since they allow cars to go around curves easily and safely provided the connecting link is of the required length. In style VI, a favorite form of bumper, the radius of the face may be mathematically calculated so that the cars will roll on each other evenly when going around a curve, and only a slight play is left in the single link coupling. Center bumpers add much to the life of the equipment as there are absent the corner bumps that strain and rack the car.

Sometimes center and side bumpers are used together, having a double bumper on one end of the car and a single bumper on the other end. This works well on inclines where there is automatic uncoupling at top.

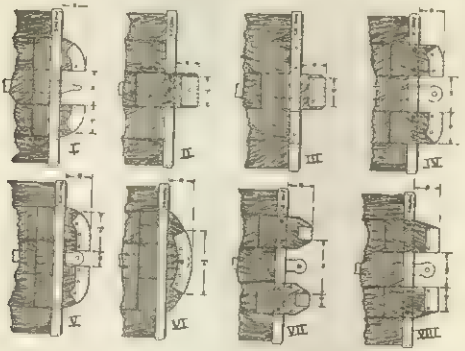

Fig. 4. Modifications of Center and Side Bumpers.

Since with any type, the bumper must stand the shocks due to sudden stopping, or the slackening of speed, they are stoutly built of a double thickness of bottom boards.

Brakes

Many different kinds of brakes are used, all of them depending upon the friction produced by pressing against the wheel a body having a wearing surface shaped to the arc of contact. The brake block may be of wood or steel. In place of the block a band of steel drawn down tightly against the wheel may be made to serve.

The place of application of the brake may be above the center line joining the axles, below it, or midway between these two positions. If above, gravity tends to draw the block, when out of use, toward the wheels and may cause rubbing. This tendency, however, may be counteracted by having a sufficient release of blocks to raise them well above the wheels. If the brake is below the center line the opposite effect is had, but in case of derailment, the brake attachments are very liable to be damaged, causing additional delay and expense in restoring the car to its former good condition. This seldom happens when the brake block is above the wheels, and this is therefore the preferable position. The midway position is frequently assumed when brakes are to be applied on both sides of the car and operated with one lever.

When wood is used a single block generally suffices being made in the shape shown in Figure 5. When set it exerts a pressure against both wheels. Metal blocks are in pairs, one to each wheel. They are cast of a mixture which will resist wear though not as hard in composition as the wheel.

Sprags are used extensively in the anthracite region in place of brakes. It consists of a pointed cylindrical stick of wood and is thrown between the spokes, locking the wheel and causing frictional resistance by the sliding of the wheel on the rail. This tends to produce flat wheels. The same bad effect

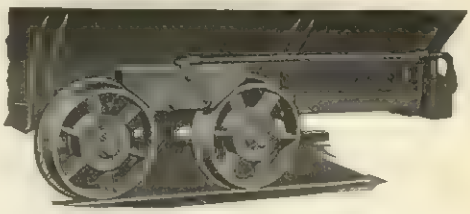

Fig. 5. The Wooden Brake Block.

is brought about by setting a brake so firmly that the wheels are locked in position and slide instead of revolving and causing frictional resistance by rubbing against the brake block.

Hitchings, Mine Car Couplings

Styles of couplings commonly found in mine use are shown in Fig. 6. The single link can be used only

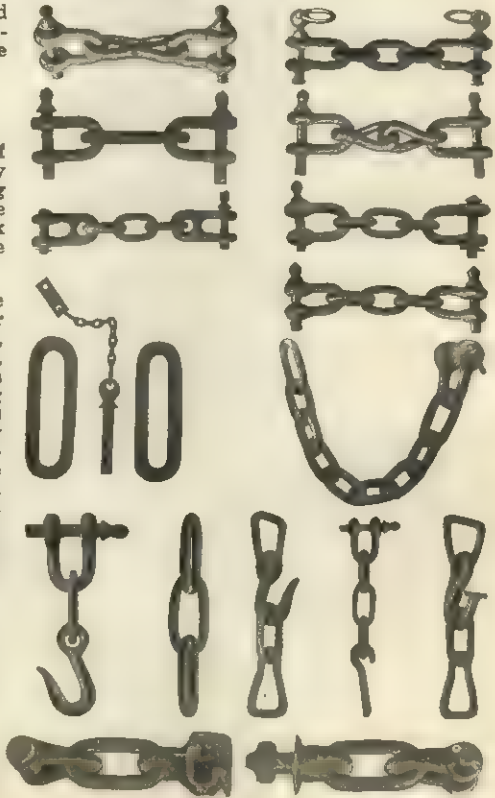

Fig. 6. Hitchings Used On Mine Cars.

on cars having center bumpers, and where curves of large radii are driven. The other styles are used with side bumper cars though they may also be used with the center bumper type. Patent hitchings, parting in the middle, are on the market. They are easy of manipulation and have the further advantage that each end can be permanently attached to the car, thus being always in place and ready for use. They are so constructed as to prevent coming apart while in service. In all of the other types one end of the coupling may be held in place by a pin with a cotter pin in the end, leaving the other end of the coupling free for connection to the adjacent car. In the double clevis hitching the pins are stoved so that they cannot pass through the upper half of the clevis and become lost. Modifications of the types shown in the figure will be found in the Catalog section.

Couplings are made of wrought iron while clevises and pins are made in one piece of steel. In each case a high tensile strength in the material is a requirement.

Automatic Couplers; Spring Draw-Heads

These are placed on cars of the heavier types, and are, in the main, patterned after the equipment used in railroad practice. The advantage of the spring draw-head lies in the reduction of shock. It also assists the motor in starting a train of loads by reason of the movement each receives due to the spring. The disadvantages are the additional weight placed on the car, and the high cost.

Wheels and Axles

Wheels are generally 18″ in diameter though 14″ and 16″ wheels are used with low cars.

From the standpoint of tractive effort a large wheel is much to be preferred to a small one; first, because a small wheel indents the rail more deeply than a large wheel, hence, while in motion must be lifted out of a deeper cavity; second, in passing over grit on the rail or inequalities in the road, the tractive effort, having a higher point of application, gives the larger wheel a greater moment to mount the obstacle; and third, assuming the same load, and therefore the same size of axle, as for example, an 18″ wheel in one case and a 36″ wheel in the other case, the small wheel will make two revolutions to every single revolution of the large wheel in travelling a given length of track. The hub of the smaller wheel making two rotations about the axle, the frictional loss will be twice that of the larger wheel.

The relation between the diameter of a wheel and tractive effort is expressed by the formulae:

$$F=\frac{k\ P}{r}$$

where F=the horizontal force required at the axis of a circular body to produce and sustain uniform motion,
k=a coefficient determined experimentally
P=the load
r=the radius of the rolling body

The objections, however, to a large wheel are: first, it requires a large axle to take care of side thrust; second, it involves additional weight and cost; and third, large wheels affect the design of the car, tending to raise the bottom and diminish capacity. The prevailing 18″ wheel may be regarded as a compromise size.

Axles are found as small as 2″ in diameter, rising from this by ⅛″ increments up to 3¼″ in diameter. While for the purpose of reducing friction, the diameter should be as small as possible, strength is of far more importance. The size of the axle may be readily computed by considering it as a beam uniformly loaded and supported at both ends, allowing an ultimate strength of 100,000 lbs. per square inch of cross section, and using a factor of safety of 8. Since the size of the axle is clearly proportional to the tare of the car plus the weight of the coal, it follows that the larger size axles are found on heavy cars.

Originally all cars were equipped with square axles clamped tightly to the car bottom. The wear on the axle journal was not distributed over the entire circumference, being greatest at the bottom portion and in consequence after the axle had been in service for some time it wore oval and caused the wheel to wear out internally. New wheels when placed on these worn journals were soon rendered useless.

The round axle, being free to rotate and distributing the wear evenly over the entire surface of the journal, is recommended to meet this difficulty. The earliest round axle consisted of a straight piece of cold-rolled steel with a hole for a cotter pin at each end. This construction allowed excessive sideways play and collars were then shrunk on to the axles, back of the boxes, to get rid of this undesirable feature.

Hollow Axles

The hollow axle makes two claims for distinction, first, being hollow it is the strongest form of construction, weight for weight, that can be presented, and second, the lubricant is stored within the axle from whence it feeds by gravity out of the open end, and thence by capillary attraction and centrifugal force along the bearing surface, escaping at the inner end of the hub and lubricating the surface where wheel thrust is taken. The axle is not rigidly attached but has floating rotary motion as well as floating endwise motion, thus equalizing the wear.

Methods of Attaching Wheels to Axles

Four methods are possible; first, axles fixed and wheels running loose on them; second, wheels fixed to the axles, the latter running loose in journal boxes which support the weight of the car; third, wheels running loose on the axles and axles running loose in the boxing; and fourth, one wheel fast on the axle and the other wheel loose.

On first thought it would appear advisable to follow the lead of the railroads and adopt the second mentioned, i. e., wheels fixed to the axles. This is, in fact, common practice in the anthracite regions and has been adopted in a number of bituminous mines. A great advantage in their use is the

absolute trueness of gage. The requirements are that curves be driven with large radii and that the roads be kept in good order. With fixed wheels one or both of the wheels must slide in travelling around a curve since the outside wheel passes over more ground than the inside one.

The practice of having one wheel loose and the opposite one tight is a compromise measure. In this case both wheels revolve with the axle until a curve is reached when the loose wheel revolves on the axle just enough to relieve the slippage referred to above.

The method prevailing in most mines, other than anthracite, is to have both wheels loose on the axle. In favor of this arrangement are, first, the smaller resistance met with in passing around curves, second, cheapness as compared with the tight wheel and axle, and third, the greater ease of renewal when worn. Where varying grades are encountered and much braking is necessary, there is always the possibility that because of setting the brakes so hard as to slide the wheels, the tread may be worn flat and make it necessary to discard the wheel. With loose wheels this involves less time and expense than with tight wheels.

Fastening Axles to Bottom of Car

Several methods of attachment are used. The earliest method, employed with the square axle, was the axle strap, one at each side of the car and bolted to the car bottom. This form is still used, as also with round axles, the strap, in this case, going around the pedestals and effecting a tying together of the running gear. A second method in use with round axles, is wide-wing four-bolt boxing, inside plates being placed on the car bottom to prevent the enlarging of the bolt holes in the wood.

It is imperative, if satisfactory results are to be derived in the running of the car, that both axles

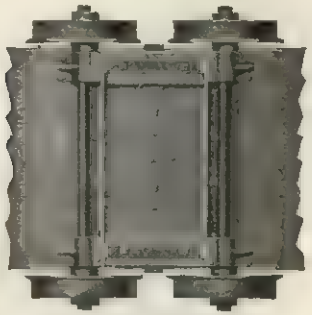

Fig. 8. The Angle-Bar Truck.

remain absolutely parallel and that they do not shift position in the direction of the length of the car. Because of a constant hard service, and more particularly owing to the manner of dumping, in which the car is thrown forward violently each time, the shock being taken always by the forward pair of wheels and the axle, there is a tendency with the axles to deviate from the parallel and with the bolt holes in the car bottom to enlarge due to wear. To guard against this requires a rigid fastening and a method for the distribution of shock. This is furnished by the use of angles, or channels, running across the bottom of the car and tied together with connecting straps, D, as in Figure 8. The angle, E, gives a much greater support across the bed of the car than with the use of straps or plain boxing. Instead of two angles or channels, a one piece solid steel plate is sometimes used, but it is questionable whether this is in any way superior to the angle or channel truck.

Foundry Methods

Car wheels are made of cast iron which as ordinarily cast is a comparatively soft metal. In order to prevent rapid wear on the tread and flange of the wheel it is necessary to make these parts very hard. This is done by chilling the iron during the casting, for which purpose there is used an iron mold. The molten metal coming in contact with this is chilled and there is produced an iron in which all the carbon is in the combined form, i. e., white cast iron. This white iron represents the chill of the wheel and it is on this that the wear of the wheel depends. Once the chill is cut through the tread of the wheel wears ont rapidly. The spokes and hub of the wheel will be of gray cast iron (the carbon here being in the form of graphite) because of the slower cooling in the sand parts of the mold. These parts are therefore less brittle and better able to withstand the shocks of service.

The process of chilling sets up certain strains which should be reduced before putting the wheels into service. To effect this the newly cast red-hot wheels are quickly lowered into preheated annealing pits, after which the pit is sealed and the wheels allowed to cool slowly. After removal from the annealing pit the wheel is now complete and ready for the machine shop. Here the hub is prepared for the journal, or the roller bearing, as the case may be, and for the flange on the boxing. Since these parts are of gray iron machining is easily done.

The making of chilled castings is one of the most difficult problems of cast-iron metallurgy. Every precaution must be taken to keep the metal very close to a given composition as the chill itself will be relatively hard or soft, deep or shallow, depending upon this. Such details as the temperature of the mold, of the chill, and of the metal when cast must be regulated with care. Only the highest grades of pig iron and carefully gathered scrap metal should be used. Because of the certainty of analysis, some manufacturers try wherever possible to get back their own wheels after they have been worn out. Other manufacturers condemn the use of any scrap whatever, this prohibition extending even to the re-use of old car wheels of their own make. Sulphur is responsible for this ruling. Every car wheel contains this objectionable element, though it is held to a low point. The old wheel, in being melted in the cupola, comes in contact with coke which imparts to it additional sulphur, producing in the finished product a higher percentage than in the initial cast of the wheel. The contention is that every wheel made from scrap contains more sulphur, and is therefore more brittle, than would be a wheel made entirely from a

mixture of pig iron coming from both the coke and charcoal furnaces.

Bearings

More thought has apparently been given to wheel and axle bearings, and the possibilities for reducing frictional resistance, than in any other branch of car design. Certainly any improvement in this direction has a far reaching effect on the expense of coal production. If by the use of a superior bearing, the drawbar pull is halved, it follows that, using the same weight of motor, twice the number of cars can be hauled as heretofore, or else, that the same number of cars can be hauled with a lighter motor. Figure either way it means a saving in operation.

In the case of a plain bearing wheel we have an example of sliding friction, that is, there is continually taking place a section of the axle. By the use of rollers about the axle rolling friction may be substituted for sliding friction, and this, in brief, is the principle on which the roller bearing wheel is based.

There are two different methods of housing the rollers. They may be in the wheel hub, or else in the journal box, which is either on the inside or on the outside of the wheel. The inside journal box is more suitable for the type of car used in the bituminous fields, while the outside journal has a wide use in the heavy anthracite regions, where owing to the heavy loads carried, journal boxes are standard. Also it is found in many metal mines. The advantage claimed for the type with rollers in the box over the other is that with heavy loads the thrust against the flange of the wheel, when rounding curves, cannot pinch the ends of the rollers. Rollers in the wheel are recommended on light, small cars, and in the box for heavy service cars.

The object of roller bearings is, of course, to reduce the frictional loss resulting from the rotation of the wheel about the axle. This reduction is stated to be from 40 to 60 per cent., this is, it requires 40 to 60 per cent. less tractive effort to move cars with roller bearings than with plain bearings.*

In order to maintain a lasting superiority over the plain bearing, roller bearings must stand years of hard usage. Any indentation on the axle due to pounding would necessarily affect the performance of the truck. Axles made of a higher carbon steel will resist this, but care must be taken to avoid getting the percentage of carbon so high as to induce breakage.

Three kinds of roller bearings are in use, the solid cylindrical type, the conical or tapered roller operating between two races and the flexible roller. Each type has its distinguishing features and has demonstrated its successful application to the problem of reducing frictional losses in mine haulage.

Lubrication

Lubrication has for its object the diminishing of friction between moving surfaces. It is a requirement for easiest running that the axle shall not come in contact with the wheel but shall revolve on a thin film of lubricant. Southwick conceives the rotation of a shaft as taking place on molecules of oil, comparing it with the balls of a ball bearing.

A definition if a good lubricant would be—one that possesses minimum cohesion among its particles and at the same time maximum adhesion to the surface to be lubricated. The cardinal principle underlying all lubrication is to use the thinnest, or least viscous, oil that will stay in place and do the work.

The solid hub self-oiling, or cavity type, wheel makes use of either a cheap grade of black oil, or a semi-fluid grease. The black oils are commonly crude oils from which the more volatile portions, as the naphthas and burning oils, have been removed by distillation. The axle is lubricated by the oil coming through the passages in the wheel leading from the reservoir. This is principally the case while the wheel is at a standstill, or travelling at low speeds as when in rapid motion, centrifugal force holds the oil in the reservoir and prevents its having access to the axle. The oil should be of such a consistency that it will feed freely through the passages and yet be sufficiently viscous to retard leakage through the wheel when it is in motion, thus leaving the axle dry and causing increased friction in proportion to the load carried. The interval between oilings depends largely upon the quality of oil used, the construction of the wheel, and the loss of lubricant through a poor fit of the axle or boxing with the open parts of the hub.

In many of the early designs of wheel little attention was given to the wastage of oil. The figures kept by one company showed that the cost of pit car oil alone was three times that of all other lubricants used at the plant.† A great deal of this waste may be prevented by employing men as oilers instead of irresponsible boys; by providing an ample and well lighted place for oiling; by using a system of markings showing the date on which each car was oiled; by using a good oiling device, such as a pressure gun, to regulate the amount of oil delivered to the wheel; and by using a wheel designed to prevent leakages.

An objection urged against thin limpid oils is that the centrifugal force developed in the revolving wheel throws the oil away from the axle, thereby preventing its lubrication. Semi-fluid oils, or greases, having more body, are presented as an alternative and are being extensively used in place of the black oils. These are made in the same manner as cup grease, the only difference being that the former is more soft bodied, due to a smaller quantity of saponified fatty oil being combined with the hydro-carbon oil. The consistency does not alter under extreme conditions of heat and cold, and while it finds its way easily into the bearings it does not pass quickly out of the wheel.

Solidified greases are not used with the cavity type of wheel but are in common use with the roller bearing type. The grease shows a high coefficient of friction at first causing a rise of temperature which melts it, producing the effect of an oil-

*For a presentation of data on the reduced tractive effort needed to move roller bearing wheels, see Bulletins No. 114 and 118, June and October, 1916, A. I. M. E.

†Mines and Minerals, Vol. 32, pg. 26.

LOCOMOTIVE HAULAGE

By W. R. CHEDSEY*

In this treatise there will be discussed various types of mine locomotives, and such points of their construction as will enable a prospective buyer to make an intelligent choice of type and size for his particular service. After the range of selection is narrowed down to two or three types it will probably be worth while for the prospective buyer to submit his data to the engineering department of the manufacturers of locomotives and get their service which is free and usually very little biased.

Electric Locomotive, Trolley Type†

The locomotive chiefly in use in mines today is the electric type, taking current from a trolley, with the return current passing through the rails or track. For this purpose direct current at 220 volts, or in some cases 440 volts and 500 volts, is nearly always used. There have been some experiments with locomotives using alternating current, but this type has not come into use up to the present time. There are unquestionably some obstacles to the design of a locomotive for use with alternating current, but in view of its constantly widening use for other equipment in the mine, such as mining machines, pumps, and booster fans, it is anticipated that the call for the alternating-current type of locomotive will be heard oftener in the future. Many mines are opened in a region in which purchased power is cheaper than power generated at the mine. To employ electric haulage means that the mine using purchased power has to provide apparatus to change the alternating current to direct current, which the present day type of locomotives use. This is a hardship because of the investment required. However, engineers of several of the companies manufacturing locomotives give it as their opinion that the alternating-current locomotive will not be developed for some few years to come.

The main haulage type of trolley locomotive consists of one, two or three motors, usually mounted through gearing so that each drives an axle separately, except in the case of the single-motor type where the motor drives two axles through bevel gearing, or spur gearing and chain and sprocket. This type of locomotive, of course, can go only where trolley wire has been strung and where the rails are steel and have been bonded. As tracks in rooms of coal mines are temporary, the rails usually are not bonded and, consequently, even if trolley wire should be strung into rooms, difficulties in operating this type of locomotive occur because of the unbonded track.

Electric Locomotive, Cable-Reel Type

To provide a locomotive that would be able to gather loaded cars out of rooms and also to place empty cars in the rooms, there was developed a so-called gathering locomotive, which, perhaps, should now be more specifically called the conductor-reel locomotive. This has the same equipment as the main-haulage type, and, in addition, on the front end of the locomotive, a reel upon which is wound an insulated electric conductor. The inner end of the conductor is attached to an insulated part of the reel, from which the current is collected by a brush and conducted to a switch so arranged that it is open when the trolley pole is up against the wire but closes when the trolley pole is hooked down to the locomotive. The outer end of the conductor cable terminates in a hook that can be hooked over the trolley wire near an insulating support or hanger. Usually this conductor cable carries two conductors, similarly arranged at the inner and outer ends and carried in one cable. When about to enter a room, one terminal, the longer, is hooked on the trolley wire and the other is hooked onto the rail, preferably at a frog or switch point. Then when the trolley pole is locked down and the ends of the conductor cable hooked in position, the locomotive can run into a room where the track is not bonded and where no trolley wire has been strung, taking and returning current through the two circuits in the conductor cable, the cable being paid out automatically by the reel as the locomotive travels from the place where the terminals are hooked. To go out of the room, provision is made for reeling up the cable either by a spring or a small electric motor or, in a few cases, by a mechanical connection to the axle through a friction clutch or drive.

The main points to be considered in this type of locomotive construction are, first, that the cable-reeling mechanism is so made as to pay out cable freely when going into the room, and to reel up cable as fast as the locomotive moves out of the room, so that there will be no slack in the cable to fall under the wheels, and also that the reeling device will not have enough power to put so much tension into the cable as to either break it or to pull the hooks loose at the terminals; and second, that there is provided a switch, operated by the trolley-pole mount, that will dead-end the cable terminals when the pole is up and dead-end the trolley wheel when the pole is down. This type of locomotive can operate on the same grades as any other type of locomotive, except the rack-rail type.

Electric Locomotive, Crab-Reel Type

In many mines there are dips and, while in most cases, rooms are turned up the dip, occasionally they are turned down and on such grades that the locomotive can not satisfactorily haul on them, particularly on the light steel, or even sometimes wooden, tracks provided in such places. To meet this condition the so-called crab locomotive was designed.

The crab locomotive consists of an ordinary locomotive with the addition of a reel for wire rope on the front end of the frame. This reel has a brake drum and provision is made for driving either from one of the main motors of the locomotive or from a separate motor. In other words, the crab attach-

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†For illustrations of this and other equipment mentioned in this treatise, see the Catalog pages which follow.

ment is a small wire-rope hoist or haul attached to the front end of the locomotive frame. In many cases this attachment can be ordered separate from the locomotive. The reel usually contains about 300 feet of cable or wire rope.

In operation, a crab locomotive stays on the main line tracks outside the room from which the car is to be hauled. The end of the wire rope, which is provided with a hook, is carried down into the room by the locomotive driver's assistant and hooked to a car or cars. Then, with the locomotive standing still, and brakes set, the hoist reel is operated by its special motor and the car pulled up to the locomotive when it can be attached in the usual way, or the locomotive can be started while the car is still approaching the locomotive and the car made to follow.

In places where there are dip rooms or occasional grades approaching 7 or 8%, the crab locomotive best fills the requirements. However, for flat or level tracks its popularity has decreased in favor of the conductor-cable type or the storage-battery type. It should be noted that there is one other point in favor of the crab locomotive, in addition to its ability to handle loads on grades, and this is that the locomotive itself does not go into the room. Consequently, tracks in the room need be only sufficiently strong and rigid for the car to be hauled.

Electric Locomotive, Universal Type

To have the flexibility of both the conductor-cable and the crab types, there is made the universal type which carries the conductor-cable reel on the front end of the locomotive, and a crab-rope reel on top of the locomotive. Then, when it is more convenient to use the conductor-cable, it can be used, as in the case of ordinary service, and if the track in the rooms is not suitable for the locomotive, or the grade is too steep, the crab attachment can be used. Quite naturally, the universal type costs more than either the conductor-cable or crab type, as it is a combination of both, but it has been very satisfactorily used in mines where conditions vary widely.

Electric Locomotive, Storage-Battery Type

The storage-battery locomotive in recent years has come to be a favorite for gathering purposes, and, occasionally, for main-line haulage purposes. It can be made flame-proof to operate safely in explosive atmospheres, and, even if not of flame-proof construction, its operation is attended with less possibilities of sparking than is any trolley type of locomotive. This is an important factor, as the rooms from which cars are gathered are usually those parts of the mine giving off explosive gases and producing the most fine dust.

The storage-battery locomotive derives its electricity from a storage battery or accumulator which is periodically "charged" by passing direct current through it, sufficient to supply electricity for operating the locomotive for a shift. The battery is carried on the locomotive, the frames and parts having been designed to support and protect the cells. A storage battery, sufficient to operate a locomotive for an eight-hour shift, is heavy and makes the total weight considerably more than is necessary to provide that tractive effort which can be sustained for long operating periods. Consequently, the placing of a battery on a locomotive brings an excess weight on the drivers and robs the electrical parts of the protection against overloads, which in a locomotive of correct design is provided for by slippage of the wheels.

One design to overcome this difficulty is the so-called articulated type which consists of two trucks and a frame work between them. Each truck has two driving wheels and two idling wheels. The frame between the trucks holds the storage battery, and is so supported on the trucks that a good part of its weight is carried on the idler or guide wheels. With this type the driving wheels can be slipped without drawing excessive current from the battery, and it is also able to negotiate sharp turns with ease because of the short wheel base of the trucks. Furthermore, the storage battery is suspended much lower than in the type where it is mounted on top of the locomotive, and this results in a low center of gravity and fewer derailments. This articulated type, however, is heavier for a given pulling capacity than the other type and on grades this is noticeable.

The voltage of the ordinary storage-battery locomotive is usually rather low so as to keep the number of cells of the storage battery as few as possible, some manufacturers using 56 volts, some 74 and others either between, or possibly up to 100 volts.

There are two types of storage batteries on the market; the lead type, using sulphuric acid as the electrolyte between poles or plates of lead, either as metallic lead or contained in pockets as lead oxide or lead sulphate, depending upon the condition of charge of the battery. The other type has plates containing nickel and nickel oxide, and iron and iron oxide with an electrolyte of sodium hydrate containing about 5% of lithium hydrate. The lead battery has a slightly greater efficiency than the alkaline type but weighs about 20% more for the same capacity. It is more easily damaged by charging or drawing high currents than the alkaline type is. In volume the two types are about equal for a given capacity.

While some manufacturers of storage-battery locomotives have recommended them as main-haulage locomotives, their greater weight and lower efficiency, due to the use of the battery, indicates that they should not be so used, except possibly under the conditions where trolley wire cannot be strung because of explosive atmospheric conditions.

Where such is the case, a solution lies in the use of two storage battery locomotives arranged tandem, in fact this method is already in use by at least one company as a safeguard against a mine explosion.

As has already been stated, the storage-battery locomotive is fundamentally a device for gathering cars, and for this purpose has already demonstrated its usefulness. It is particularly well adapted for gaseous mines, where the trolley-pole type is prohibited. It should not be used for hauling heavy trips on main haulages, nor for moving loads against heavy grades, as sufficient energy can not be stored to meet excessive demands. Possibly the best operating conditions are found where each lo-

comotive can get its full quota of coal from one or two room entries, where the maximum average grade is under 5 per cent, and where the locomotive is not obliged to travel a long distance from the room to the side track.

To charge the storage-battery locomotive a charging station must be maintained where direct current of the proper voltage and amperage can be obtained. This may be obtained from a trolley wire through suitable resistance, or from charging sets, usually motor-generator sets. Care should be taken that the charging room or station be well lighted by electric lights, with explosion-proof switches. If charging is done inside the mine, the station should be well ventilated, preferably on a separate ventilation split, discharging directly to the outlet of the mine, as during charging explosive gases, such as hydrogen are given off by the battery, and hydrogen is explosive over a wide range of mixtures.

A recent departure from usual charging methods is to provide an additional battery and battery box for each locomotive. Transfer racks are placed on parallel switch-connected tracks and by means of an inclined plane and battery power, the depleted battery is transferred from the locomotive to the rack where it is now ready for recharging. The chassis is then withdrawn and transferred to the parallel track to receive the charged battery. In this way the locomotive can be kept in continuous operation.

Electric Locomotive, Combination Type

A combination trolley and storage-battery locomotive can be profitably used at times. Here the locomotive runs on current from a trolley, wherever trolley wire has been strung, and where it has not been strung, as in rooms, current is obtained from the battery. While running on current from the trolley the battery may be charged by current from the trolley, through resistance, at the discretion of the operator. It is probably more efficient, however, to provide a regular station for charging such batteries. Because of the desirability of low voltage for the storage battery, either the trolley line voltage must be kept low, or motors with double windings be provided, one combination of windings being used when running with the trolley, the other combination when running on the battery.

For gathering purposes where the field is scattered, the combination type of locomotive has undoubted advantages since it can gather a few cars in one place on the battery, and then run by trolley to some other section as needed. In comparison with the storage-battery locomotive, it has a wider range of operation, it can cover more territory due to its high speed when running on trolley, and it has a greater drawbar pull while on the trolley. The service to which it is put is, however, more severe. This is because with the storage-battery locomotive there is only one charge and one discharge per shift, while with the combination type the battery starts the day fully charged and is given frequent boosting charges throughout the day. The average is probably equal to at least two full charges and discharges per shift, or more than twice the service demanded from storage-battery locomotives.

Fig. 1. Rack Rail Locomotive Showing Live Rail. Also Arrangement of Rack at Switches.

Electric Locomotive, Rack-Rail Type

One of the early developments of electric locomotives for mining use was the rack-rail type, where instead of traction being obtained by the frictional pull between the wheels and the rails, it was obtained by a spur gear mounted on one of the axles and running on a rack or straight gear laid between the rails. In this locomotive the pulling power was limited only by the power of the motor and the fastenings of the rack, so that the locomotives were usually made much lighter than the present day type.

In operation, however, there was always trouble with the maintenance of the racks. In some cases the racks were made of an insulated conductor which took the place of the trolley, much on the order of a third rail system. Of course, this was impossible where the floor was wet. (It may be of interest to note that the "highest railroad in the United States," that which runs up Pikes Peak in Colorado, to an elevation in excess of 14,200 ft., is of this rack-rail or cog type, but is steam driven instead of electric driven. On this road, grades as high as 45% are encountered). In present day practice, however, rack-rail locomotives for mines are nearly a thing of the past.

Compressed-Air Locomotives

An early development of locomotives for use in mines was the substitution of compressed air for steam in a locomotive of the steam type. This type was steadily improved so that it now consists of essentially a steam-locomotive frame, cylinders and drivers, but in place of the boiler and fire box of the steam locomotive, tanks are substituted for holding compressed air. As almost universally designed now there are one or more large tanks to hold air compressed to a pressure of 700 to 1200 lbs. per sq. in. These main tanks feed air through a reducing valve to a small auxiliary tank in which the pressure drops to 125 to 150 lbs. per sq. in. From this small auxiliary tank a hand-operated throttle valve admits air to the cylinders where it acts just as does steam in a steam engine, provision being made for reversing by the usual link-reversing mechanism. As the air expands in the cylinders it cools, and the cylinders are consequently designed with many flanges on them so as to absorb heat from the surrounding air and keep the lubricating oil from becoming too viscous.

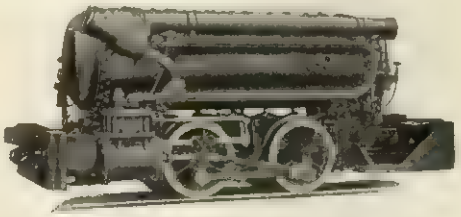


Fig. 1. Modern Type of Compressed Air Locomotive. The Tube with Offset at Left End is the Interheater.

The air is compressed by steam, or electric-driven compressors of the three or four-stage type, giving pressures in the pipe line, which is usually four inches in diameter, around 800 to 1200 lbs per sq. in. This pipe line is laid along the haulage way, with charging stations at suitable intervals. The charging station outfit consists of the tap from the main pipe line, with valve, and two or three sections of pipe, jointed by ball and socket joints and terminating in a union coupling which is attached to the feed pipe of the main air tanks on the locomotive. After coupling the pipe and opening the valve it requires only 10 or 20 seconds to charge the main tanks of the locomotive if full pressure is on the line.

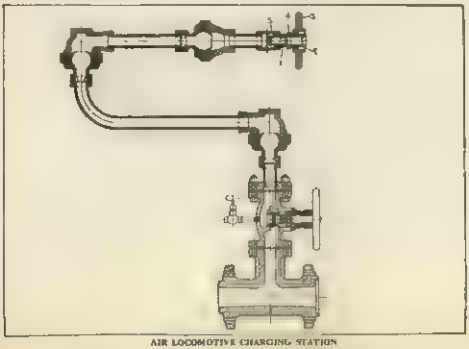


Fig. 2. Air Locomotive Charging Station.

The large diameter pipe line acts as a storage reservoir for the air. After closing the charging valve, and before uncoupling the union of the pipe, to the tank, the high-pressure air pocket in the pipes must be released by a bleeder valve, otherwise due to the sudden release of air, threads of the coupling would be torn off and the short lengths of pipe whip around like a flash. The bleeder valve is usually situated just above the main charging valve.

Up to about 1910, cylinders on both right and left sides of the locomotives were of the same size and took air alternately from the auxiliary tank through the throttle valve. Since 1910 many locomotives have been designed on the compound principle, that is, one cylinder takes the air from the throttle valve and expands it only part way, about 40 lbs. per sq. in., exhausting into an inter-heater through which it passes to the other cylinder, of larger diameter, where it is expanded to practically atmospheric pressure. The exhaust from the low-pressure cylinder is used to induce atmospheric currents of air through the inter-heater, which warms the partly expanded air passing from the high-pressure to the low-pressure cylinder. Another provision on this type of locomotive provides for by-passing high-pressure air to the low-pressure cylinder during the starting period to obtain a greater pull.

In comparison with electric locomotives the compressed-air type is less efficient mechanically and has greater losses in the transmission of power. Further, the power plant required for compressed air is more expensive and costs more in up-keep than an equivalent electric plant. The danger of shock is removed but there still remains a slight danger from the bursting of high pressure pipe or tank. The air locomotive, of course, is independent of trolley wire and bonded rails and in necessity can even run on wooden rails. However, it must reach a charging station before all of the compressed air stored in its tank is used, else it will have to be towed in. Still further, it lacks the advantages of the electric locomotive in lighting, particularly in head-light attachments. It is absolutely safe to use in gaseous mines, even though there may be explosive mixtures. There are many successful installations of compressed-air locomotive systems, but they are greatly outnumbered by electric systems.

Gasoline Locomotives

The gasoline, or internal-combustion, engine has been adapted in a variety of ways to driving mine locomotives. The most popular design of this type consists of a vertical four-cylinder motor, with electric starter, driving through a transmission, and having two forward and two reversing speeds. The drive is to only one axle of the locomotive and this must be connected to the other by chain and sprockets or suitable gearing to get sufficient weight on driver wheels without excessive trailing weight.

Upon the part of many there is an objection to gasoline motors used underground because of the pollution of the atmosphere by their exhaust. Under the usual operating conditions a gasoline motor,

or any internal-combustion engine, not only gives off carbon dioxide and water vapor, but also a variable amount of the extremely poisonous carbon monoxide. This results from too rich a mixture of gasoline vapor and air and is objectionable, not only because of the carbon monoxide in the exhaust, but because of a loss of efficiency and power in the engine, as well as overheating, and the production of carbon deposits in the cylinders. It is entirely possible and practicable to provide adjustments of the carburetor that will enable the motor to get a rich enough mixture to start upon, and then to reduce the gasoline content of the intake gases as the motor warms up, to a lean mixture. This gives the greatest efficiency, the least trouble from overheating, the least deposition of carbon, and produces no carbon monoxide in the exhaust. The question then is simply that of correct adjustments and insistence that the operator will use them properly.

The exhaust of the gasoline motor is usually a barely visible flame. However, this and other parts of the gasoline locomotive can be flame proofed as easily as can be the electric locomotive of the storage-battery type, so that, if necessary, it can be designed for use in explosive atmospheres.

The gasoline locomotive is independent of trolley wire, pipe line, bonded rails and outside plant, all of which means that the cost of installation of a system of gasoline locomotives for haulage is low compared to the electric or compressed-air systems. Should the locomotive run out of gasoline at any time, a few quarts can be readily carried to it and it will then operate normally to a place where its tank can be refilled.

While the motor and mechanical parts of the gasoline locomotive gives a very good mechanical efficiency, the fuel which it uses has a very high cost per unit of power so that the operating cost is usually higher than that of compressed-air systems, and quite a bit higher than that of the electric systems. Offsetting this is the lesser amount of capital tied up in power plants. There is no question but that where only a few locomotives are used, and it is desired that they be all-around-purpose locomotives, suitable both for main haulage and gathering, the gasoline type offers the lowest initial investment with very satisfactory operating conditions if rightly designed and used.

Steam Locomotives

The first locomotives used in and around mines were steam locomotives. For underground service a few steam locomotives are still in operation today, but, because of the obnoxious gases and heat, they have gone out of use in favor of other types. For outside service around mines many small steam locomotives, usually with the water tank carried as a saddle tank over the boiler, thus eliminating the tender, are used.

Within recent years the great increase in stripping operations throughout the United States has served to stimulate the use of steam locomotives. In mining of this kind they are used to move trips of loaded cars to the tipple and to return empties to the shovels. Another application of steam engines in outside mining service is in the use of the geared type of locomotive for moving loaded and empty railroad cars over heavy grades. Many such engines are found in West Virginia.

Locomotive Construction

In discussing the many constructional points of locomotives, the trolley type will be the one usually kept in mind. Where exceptions occur due to other types they will be specifically noted.

Frames

The frames were originally constructed of cast steel and while that still offers a cheap and satisfactory frame for small locomotives, the medium and larger sizes usually have frames built up of structural steel sections or of bolted or riveted steel plates with structural steel bracing. Each kind of frame has its advocates among the various manufacturers. All of them have certain advantages and certain other disadvantages but the general tendency seems to be toward the steel plate type of frame, either solid, or punched out to allow for inspection.

Axle and Spring Suspension

The early locomotives, being a development largely from steam locomotives, had both axles revolving in bearing-boxes rigidly attached to the frame. This, of course, was necessary for steam or compressed-air types of drives and is fairly satisfactory for the electric or other types where the track is well laid, but any unevenness in the track means that one wheel will have lighter pressure against the rail than the others, and so develop a tendency to slip one pair of wheels. Today practically all designs of electric and gasoline locomotives and some designs of steam and compressed-air locomotives suspend the frame and main parts through either leaf or coil spring systems to the bearing boxes on the axles.

Leaf springs permit an easy design, particularly in inside-wheel types (those types in which part of the frame extends outside of the wheels and where the bearings are on the stub ends of the axles projecting outside of the wheels). In six-wheel or three-axle locomotives it is necessary that the middle axle be provided with equalizer bars from the spring suspension of the end axles in order that there be equal weight on all wheels in spite of changes of grade or irregularity of track. On four-wheel or two- axle locomotives the equalizing bar arrangement is highly desirable and with leaf springs is very easy to design. Leaf springs require lubrication between the leaves of the springs as well as at the ends of the springs where they are connected to either the frame or the end of the equalizer bar.

To avoid the difficulties of lubrication, and possible excessive wear through failure of lubrication, many manufacturers have discarded leaf springs and substituted coil or helical springs. These are undoubtedly as satisfactory in operation as leaf springs and require absolutely no lubrication. (Lubrication is, however, required where the bearing boxes slide in the vertical groove in the locomotive frame, but lubrication would have to be provided here also in the case of leaf springs). Coil springs can be adapted for use with equalizer bars fairly satisfactorily, but not as easily as with the leaf springs, consequently many manufacturers use coil springs only on four-wheel or two-axle locomotives, and leaf springs with equalizer bars on six-wheel or three-axle locomotives.

Motor Suspension

The support or suspension of the electric motor and gearing is highly important. One side of the motor frame is usually supported by the axle, while the other side is supported in the middle, at one point only, through a coil spring attachment to a transverse part of the locomotive frame, the gearing being supported on the motor frame. This provides for a flexible support with all shafting constantly kept in proper alignment. Some manufacturers are less careful about the motor suspension, especially about the movement of the axle up or down with respect to the frame as the wheels travel over uneven track, which, in a rigid mounting for the motor, results in variable spacing between the teeth of the driving gears. This is quite unsatisfactory as it causes high wear of the gears and frequent breakage. It saves the motor from track vibration but subjects it to gear vibration.

Some single-motor locomotives have a motor with a longitudinal shaft extending to both axles and driving these axles through beveled gearing, the motor frame being rigidly mounted on the locomotive frame. Such an arrangement is a very good mounting of the motor, but, common to all types where one motor drives more than one axle, wheel wear is excessive because the wheels on one axle soon become of slightly different diameter than the wheels of the other axle, and, consequently, there is a continual slip. It is therefore generally better to use a type of locomotive having a separate motor to drive each axle, except possibly for storage-battery locomotives.

Fig. 4. Top View of Single-Motor Locomotive with a Longitudinal Motor.

Types of Motors

The electric motors used in locomotives are nearly always of the railway type, plain series-wound. In a few cases, series-wound commutating-pole motors are used, but the extra cost of the commutation-pole type is seldom justified, except, perhaps, in the very largest locomotives. A fairly recent development in driving motors is the compound-wound interpole motor where the shunt winding is used only for electric braking, the series winding being used for all running conditions.

The motors must be well proportioned to the work. They must be not only big enough for one trip, but must operate a whole shift without overheating. On the other hand the size should be close to that really needed to haul the load, for an excessively large motor, operating at fractional loads, uses more power and travels too fast unless resistance is used. If the motor is sufficiently powerful to slip the wheels when pulling the rated load, no larger motor could do more.

Many of the motors in today's designs are equipped with ball bearings which not only make easier running and better efficiency, but allow a design embodying small clearances between the armature and the faces of the poles, and thus results in a better operating motor.

The brushes must be so placed on the commutator that they are at a neutral position to allow the motor to run in either direction, and they must be radial to the commutator.

Types of Controllers

The type of controller used on a single-motor locomotive provides for forward to reverse running on one handle, and for a series of resistance steps between the off position and the full-on position of the other handle. With two-motor locomotives the controller is much the same, except that the handle controlling the forward or reverse direction of running also operates switches throwing the motors in series, for low-running speed conditions, or in parallel for heavier pulling or higher-speed conditions. When the motors are connected in series and one pair of the wheels begins to slip, the motor driving that pair assumes all the power in the circuit so that there is little or no power left for the wheels not slipping, and under these conditions it is advisable to switch the power off, change the motors to a parallel or multiple connection and then start again. The usual type of controller used on street railways, whereby the series-parallel switch is operated by the main or resistance step handle, has generally been unsatisfactory for mine locomotives because of the difficulty of starting on a parallel connection.

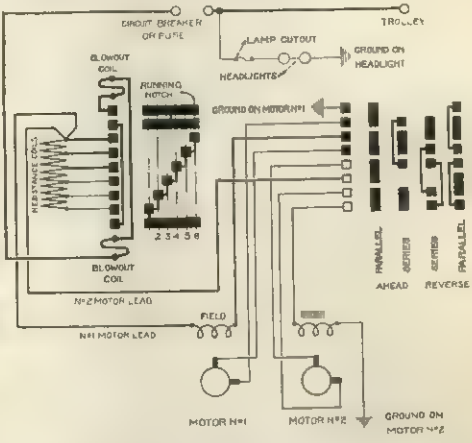


Fig. 5. Wiring Diagram for a Two-Motor Trolley Type Mine Locomotive.

A recent type of controller provides for electric braking. With this controller the series-parallel connection is operated by the main or resistance step handle. The reversing handle not only determines direction of running, but on certain steps or positions provides for operating the motor as a generator, the current from which is short-circuited through the starting or other resistance, thus absorbing considerable power from momentum and acting as a brake or check on the speed of the locomotive. This will not hold the locomotive at a standstill on a grade, but will keep it from moving rapidly and thus provides for saving a great deal of wear on wheels and brake shoes in running loads

down hill or in slowing up on level track to practically a stopping point. This type of locomotive is provided with the regulation brake shoes and hand-operated brake, but this equipment is used only to hold a locomotive at a standstill or to bring it to a standstill from a very low speed. In electrified railroads, such as in particular, the Chicago, Milwaukee & St. Paul, provision is made for electric braking by having the locomotive motors act as generators, similar to that described above, but instead of short circuiting the current through resistance, it is sent back into the trolley wire, thus saving some little power at the generating stations. However, this "regenerative" electric braking where power is "pumped back" into the trolley wire has not proved feasible as yet with mine locomotives, even of the storage-battery type, but the type of electric braking described above where the current generated is wasted through resistance has been quite successful. At first thought, it may sound wasteful to short-circuit the current through resistance, but that method of absorbing the power produces less wear and tear and is less costly than the ordinary braking with brake shoes, and, furthermore, it provides for a very flexible and sensitive control.

Types of Wheels and Brakes

The wheels of the locomotive are sometimes made of cast iron, sometimes of cast steel, and sometimes of cast iron with a shrunk-on steel tire or wearing rim and flange. This latter method, while a little more costly than cast-iron wheels, is cheaper than the all-steel wheels. Care must be taken with this type, however, to see that the tire doesn't slip on the wheel. Except on the very smallest locomotive, steel tires or all-steel wheels are worth the extra cost over cast-iron wheels.

Fig. 8. A Typical Brake Mechanism.

The brakes of the locomotive are usually suspended between the wheels and so operated that equal pressure is exerted between each brake shoe and wheel rim. The brake mechanism is usually worked by a hand wheel operating a threaded bolt and nut arrangement. In some cases the nut is fixed and the bolt travels and communicates motion to the levers pressing the brake shoe against the wheels, although the bolt may be fixed and the nut travel on it, accomplishing the same braking effect as in the other case. The latter arrangement gives a slightly more sensitive control, but means at least one more place to lubricate. Some locomotives use a pull lever, either vertical or horizontal, and provided with a pawl running on a ratchet-arc, for applying the brake pressure. While this is not very common, those who have used it nearly always prefer it to the wheel type of brake. It is true that it requires greater strength to set the brakes as tightly but its operation is quicker, and much more sensitive than is the hand-wheel type.

Hauling Power of Locomotives

All locomotives, except the rack-rail type, depend for their hauling power upon the friction between the wheels of the locomotive and the rails upon which it is running. This friction is a product of the weight on the wheels times the coefficient of friction of the contacting materials. It is also true that the weight of rail and diameter of the wheel have an influence, but this influence is small and will not be considered here. The effective weight for pulling power is the weight on the driving wheels, but for all mine locomotives, except the one type of storage-battery locomotive already mentioned, all weight is put upon the driving wheels. The coefficient of friction between dry steel rails and cast-iron wheels is about 0.20, while the coefficient of friction between dry steel rails and steel wheels is about 0.25. Wet rails provide for a lesser coefficient of friction as the water acts somewhat as a lubricant.

Tractive Effort and Draw-Bar Pull

The pressure, in pounds, of the drive wheels against the rails, times the coefficient of friction between the wheels and the rails, is termed the **tractive effort** of the locomotive; thus, a six-ton locomotive on level track and with all the weight on the drive-wheels, and with cast-iron wheels, has a tractive effort of 2400 lbs. With steel wheels the tractive effort would be increased to 3000 lbs.

The drawbar pull is the force available at the drawbar; on up grades it is less than the tractive effort by an amount necessary to pull the locomotive itself up the grade; on level track the drawbar pull is equal to the tractive effort, and on down grades the drawbar pull exceeds the tractive effort by an amount equal to the force developed by the locomotive rolling down the grade without power. The force necessary to pull a locomotive up a grade is equal to the weight of the locomotive multiplied by the percent of grade. For example, assuming a 4 per cent grade and a 6-ton locomotive, the reduction in drawbar pull due to an up grade would be $12{,}000 \times 0.04 = 480$ lbs. The effective drawbar pull will be $3000 - 480 = 2520$ lbs. On a 4 per cent down grade the drawbar pull will be greater than the tractive effort by this same amount, giving, for the same 6-ton locomotive, a drawbar pull of $3000 + 480 = 3480$ lbs. This illustration shows clearly the bad effect of up grades on the hauling capacity of locomotives. As a general rule short grades around 15 per cent are about as steep as can be successfully pulled by locomotives.

The drawbar pull of a locomotive may be expressed as a formula, letting W equal the weight

of the locomotive in tons, and G the grade in per cent, thus

$$\text{Drawbar pull} = \frac{2000\ W}{4} - 20\ G\ W$$
$$= 500\ W - 20\ G\ W\ *$$

This formula presupposes steel-tired wheels, and will give correct results for any up grade. For down grades the — 20 G W is to be changed to + 20 G W. It will be noted that on level track, where the grade per cent is zero, the last member in the equation disappears.

The grade resistance is independent of the condition of the locomotive, bearings, or track and this applies to cars as well as locomotives. In all cases it amounts to 20 pounds per ton for each percent grade. To determine the number of cars which can be moved by a locomotive it is necessary to know the frictional resistance of the cars. With good bearings well maintained cars and good track, this can be figured as 20 pounds per ton of dead weight.

There is more pull required to start a load of standing cars than is necessary to keep them in motion after once started. It is possible to theoretically figure the accelerating force necessary, but for practical purposes it may be disregarded if proper provision is made to choose a locomotive that has power enough to do the work figured for it, plus a little over-capacity. This excess capacity will take care of accelerating the load from a standstill to the proper running speed without injury to the locomotive.

In practically all mine locomotives, except possibly some gasoline-engine types, power enough is provided in the motors or engines to slip the wheels when running at speeds up to six miles per hour. This provision of extra power in the motors is usually called over-powering and usually amounts to about 10%, that is, there is 10% more power in the motors or engines than is necessary to slip the wheels on dry rails when running at six miles per hour. Six miles per hour is the usual rated speed for mine locomotives, but with light loads they can exceed that speed. When overloaded they will run at less than six miles per hour but with danger to the electrical or motor parts.

The use of sand as an aid to motor haulage should be tempered by good judgment. The practice of resorting to sand continually in order to haul excessive loads should be condemned, as it causes rapid deterioration of electrical parts, means excessive wear on both wheels and rails and increases the electrical resistance of the circuit. On the other hand it is extremely bad practice to allow a locomotive to slip and slide on a grade when an application of sand will provide good traction. The continual racking caused by slipping wheels will in time loosen up axle-cap studs, gear-pan bolts, brake parts, the resistance grids, and the sand apparatus itself. Under the proper conditions a good grade of sand applied to the rail directly under the drivers will pay for itself many times.

Rails for Locomotive Haulage

Rails for main line locomotive haulage should be at least 40 lbs. per yd. and for the heavier locomotive at least 60 lbs. per yd. While it is undoubtedly true that lighter rails are very frequently used and apparently show no bad effects, yet there are bad effects in increased deterioration of the locomotive and in the additional power required for a given work. An effort should be made to have the rails well graded and ballasted, as unevenness not only cuts down the capacity of the locomotive to haul, but means that the operator must run at a lower speed to avoid derailment.

Bonding

Rail joints should be thoroughly bonded with flexible bonds and on permanent haulageways electrical welded bonds are recommended instead of the channel-pin types. However, the compressed type should be used on temporary roads that are liable to be torn up and relaid. Cross bonds, connecting across the track from one rail to the other, should be used at intervals of one or two hundred feet and at all switches. (The subject of bonding will be found more completely covered in the Electrical Section).

Sanding Rails

Practically all mine locomotives are provided with sand boxes and valves for operating the outlets leading to the rails. Mention has already been made of the proper and improper methods of sanding so it will not be necessary to repeat it here. Provision should be made to use only thoroughly dried, clean, fine sand in the sand boxes, even if it is necessary to screen and provide drying equipment. Many mines screen the sand on the surface, take it to underground distributing points where it is kept dry until put into the sand boxes on the locomotives.

Trolley Lines, Guards and Switches

Trolley wire should be chosen of ample size to provide against excessive line drop of voltage. In long lines feeder cable should be carried along the haulageway and tapped to the trolley wire at 500 ft. intervals or thereabouts. Trolley wire may be of round, recessed-round, or figure-eight cross section. Probably the recessed-round shape gives the best results for the money invested in it. There are hangers or insulators for suspending the trolley wire from the roof or side of the haulageway of a variety of types and care should be exercised in choosing a type that will meet all needs of the mine and at the same time offer thorough insulation against leakage by dripping water.

Sectionalizing switches, which cut off the electric sections of the mine when the locomotive is not operating on that section, promote safety and also save power that otherwise would be lost by leakage, although in dry mines there is very little leakage.

*Editor's Note—The formula given is based on the statement that on level track the drawbar pull is equal to the tractive effort. This view is at variance with the one which regards the drawbar pull as less than the tractive effort because of frictional resistances, which in the usual formula is stated as equal to 20 lbs. per ton of locomotive weight. Making this deduction, the formula becomes

$$\text{Drawbar pull} = \frac{2000\ W}{4} - 20W - 20G\ W = 480\ W - 20\ G\ W$$

These switches may be either hand operated or automatically operated by the passage of the trolley wheel as the locomotive goes into or out of the section. Some sectionalizing switches provide for fuse protection, but if the fuse protection on the locomotive is in proper shape, fuses on the sectionalizing switches are not needed. Some of the states have laws requiring that the trolley wire be guarded by non-conducting wooden boards extending on each side of it for a vertical height of four to six inches below the trolley wire and having a space between the boards of not more than four inches. This inverted trough guard does not interfere in the slightest with the trolley or trolley pole and offers a very effective safe guard not only against shock, but against short circuits when crowbars, drill steels or other metallic material are carried in the haulageway.

RULES FOR THE OPERATION OF STORAGE BATTERY LOCOMOTIVES*

Assuming that the batteries are fully charged when the locomotives are taken out of the motor barn at the beginning of the shift;

First, open the main-battery switch on the locomotive. (This is to prevent a short circuit in the battery should the metal covers accidentally come in contact with the inter-cell connections and the frame of the locomotive).

Second, place the asbestos board covers over the battery compartments, place the metal covers on the locomotives and close the main-battery switch. (The locomotive is now ready for operation).

Third, the battery must not be charged until the indicating hand on the ampere-hour meter has passed the gassing point. After the indicating hand on the ampere-hour meter has passed the gassing point, the shunt trip circuit breaker in the charging circuit may be closed and the battery charged at will. Until the indicating hand on the ampere-hour meter makes contact at the low discharge point, the shunt trip circuit breaker is open in the battery discharge circuit which has been described heretofore. The motorman has positive instructions not to meddle with the shunt trip breaker in the discharge circuit.

The motorman at the end of the shift delivers his locomotive to the motor barn. Here he is instructed as follows:

FIRST: To open the main-battery switch on the locomotive. (This prevents a short circuit in case the metal covers accidentally come in contact with the inter-cell connections of the battery and side frames.)

SECOND: To remove the metal covers from the top of the locomotives and asbestos board covers from the battery compartments.

THIRD: To report to the electrician for record the number of cars of coal and slate pulled, and any trouble with the battery or locomotive and any delays such as waiting on empties, waiting on charge, off track, or hauling supplies.

Instructions to the repairmen in charge of the motor barns where the combination storage battery and trolley locomotives are used are:

FIRST: At the end of each shift to inspect the battery to see if the electrolyte is at the proper height above the tops of the plates in all cells. If found low, the battery is flushed, this means adding pure distilled water until the electrolyte is at the proper height. A battery may need flushing once, twice or three times a week, depending on how hard the battery is being worked.

SECOND: To replace any cracked covers or jars, repair any leaky sealing, and examine any cells which may show signs of trouble.

THIRD: To take the gravity reading of the pilot cell daily, comparing it with the ampere-hour meter reading. This is done to keep check on the battery and to keep the ampere-hour meter and the battery in step.

FOURTH: To see if the motorman has turned the indicating hand on the ampere-hour meter by tampering with the reset. This was very easy to do on the first meters, but the meter manufacturers have overcome this feature in their later designs.

FIFTH: To put the battery on charge and leave it until fully charged, at which time contact is made withm the meters, thus stopping the charge.

SIXTH: Not to allow a locomotive to leave the motor barn with a jumper in the boosting resistance. To take a locomotive out of service if the boosting resistance is broken or otherwise damaged, until it can be replaced or repaired. This is necessary to protect the battery from a too high rate charge. It must be kept in mind that the boosting resistance is a fixed resistance of proper capacity in series with the battery while it is being charged from the trolley.

SEVENTH: All repairmen have positive instructions, never to add any acid to a cell in the battery without first ascertaining the cause of the low gravity, as only the water evaporates from the electrolyte, there being no loss of acid during the charge or discharge of the battery. The acid may be lost by being spilled, flushed too full, cracked jars or covers, or leaky sealing.

If the repairman finds that the electrolyte has been lost by any of the above reasons, the cells in trouble are refilled with electrolyte of about the same specific gravity as is in the surrounding cells.

EIGHTH: All repairmen have specific instructions never to flush a battery with distilled water which has been in a metallic vessel of any kind (lead excepted) and to always keep the vessel clean and covered to keep any impurities out. Glass, earthen-ware, rubber, or wooden receptacles, which have been thoroughly cleaned, are permissible.

NINTH: That the equalizing charge must be given once each week, this done by placing the battery on charge in the regular way and when the indicating hand on the meter reaches the zero contact on the meter it is then turned back about 25 per cent of the capacity of the battery in ampere hours and the charge continued (disregarding the ampere-hour meter) at approximately one-half the finishing rate until the maximum gravity is reached. This is determined by taking the gravity reading of one or more pilot cells every half hour until there is no further rise in gravity. The ampere-hour meter indicating hand is then placed at zero on the meter showing that the battery is fully charged at which time the meter and the battery are said to be in step. Full directions for giving the equalizing charge are given in the battery manufacturer's instruction book. Every man who has charge of batteries should have one of these books.

TENTH: That during the slack run at the mines, the batteries must be kept properly flushed, charged, and clean at all times.

ELEVENTH: That they must not leave a battery standing out in the hot sun with the covers over the batteries removed. The heat from the sun will soften the covers and top edges of the jars. (These will harden up again as soon

*From paper on Storage Battery Locomotives, read by John B. Hicks, before Kentucky Coal Mining Institute.

as taken out of the sun). The heat of the sun also causes the sealing compound to run down, possibly causing the sealing to become leaky, which is very objectionable.

TWELFTH: In cold weather after flushing a battery, to put it on charge immediately. This will cause the water and the electrolyte to become thoroughly mixed, which prevents the water from freezing. In cold weather a battery in a discharged condition must not be left standing out exposed, as the specific gravity of the electrolyte is very low and will freeze at about 28 degrees F. above zero. See battery manufacturer's instruction book for complete information.

THIRTEENTH: Once a week to wash the tops of the batteries with a soda solution. This is then washed off by turning a hose on the whole battery in the locomotive. This neutralizes any acid on the tops of the trays and battery, keeping them clean and in good condition. This also washes any dirt out that might be in the battery compartments. (The battery compartments may be so designed that it is possible to wash the batteries without getting any water on the electrical equipment of the locomotive). Before washing the battery, as above stated, one must first be certain that all plugs are in the cell covers, and that there are no broken or leaky covers in the battery. By keeping the trays from becoming acid soaked they last the entire life of the battery. To clean the battery by washing it in this manner does not require more than about fifteen minutes per battery and about two cents worth of soda and sufficient water for washing.

FOURTEENTH: To report any unnecessary abuse of the storage battery and the locomotive to the mine foreman and superintendent.

FIFTEENTH: To properly instruct all motormen in the care of the battery as to its charging and discharging, also the care of the locomotives.

Operating instructions to the superintendents, mine foreman and assistant foremen, in charge of mines where the combination storage-battery and trolley locomotives are used, are the same as to the motormen, emphasizing the charging and discharging of the batteries according to instructions. They are also instructed:

(1) Not to permit the hauling of supplies on the tops of the locomotives. This is necessary in order to prevent the metal covers from being mashed down into the top of the battery, also to prevent nails, track spikes or any other metal conductors from working down between the metal and asbestos board covers to the top of the battery and causing a short circuit on one or more of the cells, or between the inter-cell connectors and the frame of the locomotive. In either case an explosion might occur in the battery, doing considerable damage to the battery in the way of blowing the covers out, breaking them, or cracking the jars.

(2) That they are not to permit the "goosing" of the trolley on the battery. (That is, the motormen are not to change the position of the reverse cylinder to the position opposite that of the direction of motion of the locomotive, before the locomotive is stopped by the brake).

If the reverse cylinder position is changed to that opposite the direction of motion of the locomotive and the motors fail to generate and do not stop the locomotive, the controller is then opened to the first point. This will cause a very heavy current to be drawn for an instant causing unnecessary heating and burning between the commutator and brushes. The reason the motormen "goose" the motors is to prevent setting and releasing the brake.

(3) To report at once any unsatisfactory service or trouble with the battery or locomotive to the repairman.

CAPACITY TABLE*

Watt Hours Required at the Battery to Move ONE TRAIN TON for Various Distances Over Various Grades Based on 30 lb. per ton Friction Resistance on Level

% Grade	FEET								
	100	200	300	400	500	600	700	800	900
—1½	.....	.....	.....	.....	.....	.....	.....	.....	.....
—1	.568	1.136	1.704	2 272	2.840	3.408	3.976	4 544	5 112
— ½	1.136	2.272	3.408	4.544	5.680	6.816	7.952	9 088	10.224
000	1.704	3.408	5.112	6.816	8.520	10.22	11.93	13.63	15 34
½	2.272	4.544	6.816	9.088	11.36	13 63	15 90	18 18	20 45
1	2 840	5 680	8 520	11 36	14.20	17.04	19 88	22 72	25.56
1½	3 408	6 816	10 22	13 63	17.04	20.45	23 86	27 26	30 67
2	3.976	7 952	11 93	15 90	19.88	23.86	27 83	31 81	35 78
2½	4.544	9.088	13.63	18.18	22.72	27.26	31.81	36.35	40.90
3	5.112	10.224	15.34	20.45	25.56	30.67	35.78	40.90	46.01
3½	5.680	11.360	17.04	22.72	28.40	34.08	39.76	45.44	51.12
4	6.248	12.496	18.74	24.99	31.24	37.49	43.74	49 98	56.23
4½	6.816	13.632	20.45	27 26	34 08	40 90	47.71	54 53	61.34
5	7.384	14.768	22 15	29.54	36.92	44.30	51.69	59.07	66.46
5½	7.952	15.904	23.86	31 81	39.76	47.71	55.66	63.62	71.57
6	8.520	17.040	25.56	34.08	42.60	51.12	59.64	68.16	76.68
6½	9 088	18 176	27 26	36 35	45 44	54 53	63 62	72 70	81.79
7	9.664	19.308	28.97	38.62	42 28	57.94	67.59	77.25	86.90
7½	10 232	20 444	30 67	40 90	51.12	61 34	71 57	81 79	92 02
8	10.790	21.580	32.38	43.17	53.96	64.75	75.54	86.34	97.13
8½	11.368	22.736	34.08	45.44	56.80	68.16	79 53	90.88	102.2
9	11 926	23 862	35 78	47 71	59 64	71 57	83 50	95 42	107 4
9½	12 494	24.998	37.49	49 98	62.48	74.98	87.47	99 97	112.5
10	13.062	26 134	39 19	52.26	65 32	78 38	91 45	104 5	117 6

Compiled from Formula $\frac{T.\ D.\ (3 + 2R)}{176} = W.\ H.$

Where

T = Wt. Trip in Tons (including locomotive)
R = Grade in Per Cent.
D = Distance Under Consideration
W. H. = Watt Hours Required at Battery

Grades %.....	—1	—½	Level	1	2	3
Deduct Account Roller Bearings.....	100%	50%	33%	20%	15%	10%

The values in above table must be weighed according to operating conditions. They will be affected to a considerable degree by the following:

Alignment of track; also rails; dirty or slippery rails; curves; switching; age of battery; rate of discharge (if over normal, capacity of battery is decreased); temperature; condition of car bearings. The table gives values for average mine conditions. Experience only will tell when to add or deduct and how much.

*Courtesy Mancha Storage Battery Locomotive Company.

Specimen Form Sheet for Haulage Locomotives

(Information Desired by Manufacturers)

Type Required

Electric
Compressed air
Gasoline
Steam
Storage Battery

Size or Weight Locomotive Required

Number Required

Dimensions

Maximum width locomotive can have
Maximum height locomotive can have
Is it necessary to take apart to install (in case of shaft mine)?

Track

Weight of rail..... lbs. per yard
Exact gauge of track on straight haul
Exact gauge of track on curves
Radius of shortest curve in feet from center of track
Length of shortest curve
Average length of haul

***Grades**

Maximum grade in favor of load is ... % for ... ft.
Maximum grade against load is ... % for ... ft.
What is the average grade and is it in favor or against the load?
Length of maximum grade (in favor of load ....
Length of maximum grade (against load ....
If curves occur on grade, what is radius and grade?

Haulage Conditions

Width of entry
Height of entry over rail and at lowest point in rooms
Clearance each side of track
Number of cars to be hauled per day
Number of cars per trip
Number of places to haul from

†Cars

Length of pit car
Width of pit car
Weight of pit car and load
Diameter of pit car wheel
Length of wheel base
Do pit cars have center or side bumpers?
Height from top of rail to top of bumper
Height from top of rail to bottom of bumpers
Width from outside to outside of bumpers
Height from top of rail to center of hitching
Dimensions of coupling—length and width, inside and outside

Trolley Wire (Use this for Electric Locomotives)

Location—Right or left side going toward face
Distance of trolley wire outside of track rail
Highest point in trolley wire above rail
Lowest point in trolley wire above rail
Location of motorman
Voltage
For gathering locomotive, give longest haul locomotive must make using cable

Gasoline Locomotives

Is haul inside or outside?
Kind of liquid fuel available
Altitude above sea level
State ventilating conditions

Compressed Air Locomotives

Elevation above sea level of compressor location
Will compressor be operated by steam or electric power?
If steam, state pressure
If slope mine, give length and pitch
If shaft mine, give depth
Give distance from convenient location for compressor to head of shaft or slope
If drift mine, state distance from convenient location for compressor to parting outside where locomotive will deliver loaded cars.

Storage Battery Locomotives

What source of power, giving voltage, etc., will be used to charge locomotive batteries?
Number of entries to be served for gathering locomotive
Number working rooms to be served on each entry
Give a schedule of the service required of the locomotive, stating when at work and when idle throughout the 24 hours?
Will it be possible to give the battery a boosting charge at any time during the day?
*Give complete information on grades

*A sketch, or better, a map of your tracks with notations thereon in regard to grades and elevations at various points and referring to the weights of, or number of carloads of material which must be hauled between the various points per hour or in 8, 8 or 10 hours, usually gives a much clearer idea of your requirements than it is possible to give by tabulated method. A profile of important roads, or those where excessive or irregular grades occur, may also suggest important alterations in the equipment If haulage roads are to be lengthened, indicate which ones, and at what rate in feet per year they may be expected to increase in length. If the quantities to be hauled will increase, state how soon and how much. Also what lengths of haul and what quantities you wish to provide for in making the initial installation.

†If possible, it is expedient to furnish drawings of cars showing bumper and draw-bar so that locomotive may be arranged to suit.

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES CORRECTLY FASHIONED AND TAILORED
ATTRACTIVELY LOW PRICED

PRACTICAL GIFTS THAT BRING HAPPINESS

ALASKA BLUE WOLF CHOKER

This good looking choker is made from the splendid wearing Wolf—in this season's new color Alaska Blue. It is chic and very striking in appearance. Not only attractive, but very durable and nicely finished Priced exceptionally low

No. 3M5506 Each. **$70.00**

POIRET FOX CHOKER

Poiret Fox choker of a medium shade of brown. This soft, silky, lustrous fur is so adaptable to this pleasing choker style Very rich and attractive nicely tailored and finished Would make a charming gift which would immensely please the recipient

No. 3M1979 Each **$50.40**

SILVER KIT FOX CHOKER

A good looking and very prepossessing choker in Silver Kit Fox, double fur. Has natural tail and paws and closes with a fancy chain fastener Nicely made and finished At this attractive low factory price it is especial value.

No. 3M1996 Each **$37.80**

TWO SKIN JAPANESE MINK CHOKER

This lovely Two Skin Japanese Mink choker has natural heads and tails, closely resembling the American Mink. It is a very attractive choker, nicely made and elegantly finished It is priced at a real saving at this low factory price

No. 3M2502 Each. **$35.70**

SQUIRREL CHOKER

One of the best selling chokers this season, is this good looking Natural Squirrel choker. It is made from three extra large Squirrel skins, and finished with a natural looking head and tail, and closes with a fancy chain fastener.

No. 3M5304 Each. **$21.70**

ONE SKIN STONE MARTEN OPOSSUM CHOKER

This generous size choker is made from the finest quality Opossum skins obtainable, and is blended in the popular Stone Marten shade It is very much in demand and priced so low that it is within the reach of all.

No. 3M4301 Each. . . . **$10.50**

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES CORRECTLY FASHIONED AND TAILORED
ATTRACTIVELY LOW PRICED

PRACTICAL GIFTS THAT BRING HAPPINESS

ALASKA SABLE FOX CHOKER

This beautiful Alaska Fox Choker is the finest quality obtainable in the lovely Sable Shade. Made of very choice and selected skins, nicely fashioned, tailored and finished. It is sure to captivate the person of refinement and at our low factory price is indeed a special value.

No. 3M1982 Each.....**$140.00**

BLACK FOX CHOKER

This lustrous, good looking choker is fashioned in the popular double fur choker style, giving extra warmth and protection. Has natural head, tail and paws and closes with a snap chain fastener. It is most exquisitely chic and prepossessing in appearance and is attractively priced.

No. 3M2048 Each..... **$93.35**

ALASKA BLUE FOX CHOKER

At a very moderate low factory price we are offering this very high grade Alaska Blue Fox Choker as an outstanding value. It is expertly fashioned in the popular choker style, with head and paws, and closes with a fancy chain fastener. The richness of material, the expert tailoring and nice finish is very pronounced.

No. 3M1985 Each. . . **$113.35**

BROWN FOX CHOKER

A lovely Brown Fox Choker of very soft, silky, selected skins. A scarf that we recommend to you for its beautiful appearance. It is tastily designed, nicely fashioned, tailored and finished faultlessly. For so high grade a choker it is priced surprisingly low in this selling.

No. 3M1995 Each . . . **$93.35**

TWO SKIN AMERICAN MINK CHOKER

This popular two skin American Mink choker is a most desirable number. Perfectly matched selected skins, nicely tailored and superbly made and finished. Has Natural heads and tails. You will find the intrinsic value especially well represented at our low factory price.

No. 3M3109 Each. **$73.35**

ALASKA BLUE FOX CHOKER

A rich looking fox choker in the Alaska Blue shade that is very chic and prepossessing in appearance. This shade is one of the predominating colors of the season and will appeal to you for its striking appearance. It is nicely tailored and excellently finished, notwithstanding being very attractively priced.

No. 3M2005 Each. **$70.00**

Fashionable Furs at Factory Prices

This Season's Latest Styles. Correctly Fashioned and Tailored.

Attractively Low Priced.

PRACTICAL GIFTS THAT BRING HAPPINESS

GENUINE HUDSON BAY SABLE TWO SKIN CHOKER

This unquestionably rich and very handsome choker is made from genuine Hudson Bay Sable. It will appeal to the person who requires something out of the ordinary, that is distinctive and very prepossessing. It is correctly fashioned and tailored and made of selected very high quality skins. It carries a very low factory price for such a superior quality.

No. 3M4928 Each **$308.70**

MARMINK JACQUETTE

A very pretty Jacquette of selected high quality Marmink. Very fashionable and chic in appearance and popular with people of refinement and means. Made of selected skins, the workmanship and finish measures up to an excellent standard throughout. It is attractively priced in this selling in which you are assured of an elegant value.

No. 3M8813 Each **$193.35**

TWO SKIN STONE MARTEN CHOKER

Illustrated above is one of the ever popular two skin Stone Marten chokers, very much in demand and priced very reasonable. We have such a demand for this number that we are offering the same in three qualities, as quoted.

No. 3M4914A Extra Selected Quality, each. **$166.70**
No. 3M4914B Selected Quality, each. **146.70**
No. 3M4914C Good Quality, each. **129.35**

WHITE CONEY JACQUETTE

One of the season's newest creations, modeled in the imitation Ermine White Coney Jacquette. A very pleasing style and priced within the reach of all. It is correctly fashioned, excellently tailored and elegantly finished. It is most exquisitely chic and very attractive in appearance and a great favorite amongst the younger set.

No. 3M8810 Each **$146.70**

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES — CORRECTLY FASHIONED AND TAILORED — ATTRACTIVELY LOW PRICED

The House of Co-operation Inc. 1889 1924

Practical Gifts That Bring Happiness

No. 3M2514 Jap Mink Cape, Each $440.00

SELECTED QUALITY JAP MINK CAPE

This lovely and beautiful large Jap Mink Cape illustrated to left is masterly designed and correctly fashioned and made from selected quality Jap Mink skins, perfectly matched and ornamented with natural tails and paws. It is of generous size, splendidly tailored, very rich and attractive in appearance. It permeates an air of individuality and refinement and is very pronounced in its richness of unsurpassing quality. For so superior a grade, our factory price is exceptionally low.

No. 3M2514 Selected Quality Jap Mink Cape, each. **$440.00**

EXTRA QUALITY JAP MINK CAPE

This chic and charming Jap Mink Cape is made of extra fine quality Jap Mink skins. These skins are perfectly matched and the color resembles very closely the expensive American Mink. It is finished with natural tails and paws added for attractiveness. Would make a delightful gift which would highly please the recipient. It is correctly fashioned, excellently tailored and finished in a most superb manner. Our factory price, considering quality, is exceptionally very low in this selling.

No. 3M2515 Each..... **$306.70**

No. 3M2515 Jap Mink Cape, Each $306.70

No. 3M3306 Marmink Cape, Each $180.00

MARMINK CAPE

A shoulder cape of the ever popular Marmink. This warm, durable cape should appeal to you at this attractive low factory price. A garment we are sure you will be proud to possess. It is correctly fashioned and tailored with utmost care and nicely finished throughout. Quantity production accounts for this amazing low price and you will pronounce the value extraordinary upon receipt of garment. If not satisfied in every way, the same can be returned for credit.

No. 3M3306 Each..... **$180.00**

No. 3M5510 Wolf Scarf, Each $63.00

WOLF SCARF

In a very high grade choker this has been a popular design and a fast selling number. It is attractive and very prepossessing in appearance. Splendid wearing Wolf is used in modeling this always popular satin lined scarf. It has a natural Wolf head and natural tail. The demand has been so unusually heavy, that it is regularly supplied in Taupe or Brown colors. Workmanship and finish throughout executed by skilled hands. Price very reasonable considering the high quality.

No. 3M5510B Brown Wolf Scarf, each..... **$63.00**

No. 3M5510T Taupe Wolf Scarf, each..... 63.00

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES — CORRECTLY FASHIONED AND TAILORED — ATTRACTIVELY LOW PRICED

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than illustrated can be made to special order. Extra sizes cost 15% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional cost. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail

PRACTICAL GIFTS THAT BRING HAPPINESS

JAP MINK COAT

We feature here one of our very finest fur coats, which is modeled from selected Jap Mink, perfectly matched, correctly fashioned and designed, and faultlessly finished, resembling in appearance the very expensive American Mink. This garment is very rich and prepossessing, chic and exclusive and one that you would be proud indeed to possess. It is in adherence to the prevailing style, measuring the full 48 inches long. Also made in 45 inch length. For such a splendid garment, rich in wealthy material, it is especially priced.

No. 3M8543A Length 48 inches, each — $780.00
No. 3M8543B Length 45 inches, each. — 715.00

SEALINE COAT

This refined and neat appearing well made coat is of select quality Sealine, with a real natural Black Marten shawl collar and cuffs in the very latest style. It is full 40 inches long and is lined with a splendid quality silk lining. It is correctly fashioned, excellently tailored and faultlessly finished. It is priced exceptionally low and we assure you no better value could possibly be offered at this low price than this garment.

No. 3M8143 Each — $226.70

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES — CORRECTLY FASHIONED AND TAILORED — ATTRACTIVELY LOW PRICED

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than illustrated can be made to special order. Extra sizes cost 15% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional cost. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail.

PRACTICAL GIFTS THAT BRING HAPPINESS

PLAIN SEALINE COAT

So striking in appearance is this wonderful garment that we have made arrangements with our factory to anticipate our needs, which we feel will run far into the hundreds, so that our customers will not be disappointed. The perfectly matched skins are of good quality, jet black Sealine, resembling very closely the expensive Hudson Seal. A good looking sash girdle is added as an additional means of attraction. It is lined with a very good quality figured silk and is full 40 in. long.

No. 3M7007 Each — **$133.35**

BROWN CONEY COAT

Brown Coney Coat of select quality, perfectly matched, dark brown Coney skins. Faultlessly made and correctly modeled in the latest style, with shirred shawl collar and mandarin sleeves, as decreed in the prevailing styles today. This is one of the outstanding values of the year. Quantity production accounts for the amazing low price. Every purchaser is assured of a positive saving and if not perfectly satisfied in every respect the same can be returned to us for credit without any obligation. It is the full 43 inches long, which is between and not extreme.

No. 3M8145 Each — **$100.00**

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES CORRECTLY FASHIONED AND TAILORED

ATTRACTIVELY LOW PRICED

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than illustrated can be made to special order. Extra sizes cost 15% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional cost. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail.

PRACTICAL GIFTS THAT BRING HAPPINESS

GENUINE HUDSON SEAL COAT

A Genuine Hudson Seal Coat of superior quality and unsurpassed workmanship through and through. Not designed for competitive purposes, but unusually well tailored and finished and still priced below competitive prices, which comparison will reveal. Has beautiful shirred shawl collar of selected Natural Black Marten and one-skin cuffs. This coat is the full 48 inch length. It is unquestionably rich and prepossessing in appearance, radiating its individuality and charm which is undeniable.

No. 3M8214 Each **$715.00**

GENUINE HUDSON SEAL COAT

Those preferring the shorter length are afforded an opportunity in purchasing a strictly very high quality coat at an amazing low factory price. This genuine Hudson Seal Coat with selected Natural Black Marten collar and bell cuffs, measures the full 40 inches in length. The skins are perfectly matched, and the garment is correctly fashioned, excellently tailored and superbly made. It is especially priced in this selling to defy competition and as you undoubtedly recognize values, the price of this ultra superior quality coat should appeal to you.

No. 3M8288 Each **$486.70**

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES CORRECTLY FASHIONED AND TAILORED

ATTRACTIVELY LOW PRICED

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than illustrated can be made to special order. Extra sizes cost 15% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional coat. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail.

PRACTICAL GIFTS THAT BRING HAPPINESS

BAY SEAL COAT

A real chic, smart and classy looking garment that you will be proud to possess. This masterly designed coat is fashioned from selected Bay Seal of superior quality. The finish and general appearance of this coat is the very finest throughout. Can be had with either the Natural Squirrel, viatka or Natural Black Marten collar. Has a one skin Bay Seal cuff. The garment measures full 48 inches long. Dignified and refined, it is attractively priced and should appeal to those wishing a coat of superior quality

No. 3M8108 Each. .. $420.00

NATURAL MUSKRAT COAT

This good looking coat is made from Natural Muskrat skins, which we recommend for its durability and service. It is trimmed with Natural Raccoon collar and cuffs, and lined with a good quality lining. The large and stylish Raccoon collar adds extra warmth and protection in the severe weather. It is masterly designed, correctly fashioned and tailored and excellently finished. Owing to its popularity, it is made in two lengths, 45 inches and 48 inches.

No. 3M8305A Length 45 inches, each. $340.00

No. 3M8305B Length 48 inches, each. $366.70

Fashionable Furs at Factory Prices

THIS SEASON'S LATEST STYLES CORRECTLY FASHIONED AND TAILORED

ATTRACTIVELY LOW PRICED

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than illustrated can be made to special order. Extra sizes cost 15% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional cost. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail.

PRACTICAL GIFTS THAT BRING HAPPINESS

BAY SEAL COAT

A very attractive and most exquisite coat of Bay Seal, with the Dyed Black Marten collar and cuffs, resembling in appearance a great deal more expensive fur. It is correctly fashioned and tailored and faultlessly finished. Fashion decreed this coat to be extremely popular this season and judging from the early sales, it will be a fast selling number. It measures the full 48 inches long. It is priced at a real saving, in which the intrinsic value is especially well represented.

No. 3M8108 Each **$300.00**

MARMINK COAT

This Marmink coat is indicative of refinement and individuality It is fashioned in the prevailing style, well made from Marmink, which is a clever imitation of the more expensive Mink. It has high quality, attractive and well wearing lining. It comes in the full 45 inch or the full 48 inch lengths as priced below. Our low factory prices should interest judicious buyers, as a substantial saving can be effected in each and every purchase.

No. 3M8403A Length 45 inches, each. **$263.35**

No. 3M8403B Length 48 inches, each. **280.00**

Fashionable Furs at Factory Prices

This Season's Latest Styles. Correctly Fashioned and Tailored.

Attractively Low Priced.

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than Illustrated can be made to special order. Extra sizes cost 15% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional cost. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail.

PRACTICAL GIFTS THAT BRING HAPPINESS

SEALINE CAPE

Featuring one of the season's latest offerings in a Sealine Cape, which is fashioned in an up to the minute style of splendid quality Sealine or Bay Seal. It is a full 30 inch long and lined throughout with an attractive durable silk lining. Capes have a marked tendency to make one appear so chic and petite in appearance, and as this number is such a high quality and priced so exceptionally low, we anticipate a wonderful sale.

No. 3M8117 Each **$280.00**

SEALINE COAT

This garment of plain Sealine is very stirring in appearance, fashioned in the prevailing style and one that should appeal to judicious buyers at this attractive low factory price. Has shirred shawl collar and band cuffs, and is lined throughout with a brocaded Skinner's satin lining. It measures the full 48 inches long. Can furnish silk cord as shown or fur belt if desired at same prices. This is optional. If fur belt is wanted, be sure to specify the same.

No. 3M8110 Each **$226.70**

Fashionable Furs at Factory Prices

This Season's Latest Styles **Correctly Fashioned and Tailored**

Attractively Low Priced

Fur coats are supplied in the regular bust measures of 34 to 42 sizes. Anything other than illustrated can be made to special order. Extra sizes cost 16% more for each additional bust measure. Coats are supplied with cords or fur belts, as the descriptions state. However, they are optional and can be had in either, without additional cost. In this event, state wants very clearly. Should you not be able to make a selection from any garment shown, would ask that you kindly advise us your needs, and we will be very happy to take this matter up with you in detail.

PRACTICAL GIFTS THAT BRING HAPPINESS

NATURAL MUSKRAT COAT

A real attractive and smart looking coat in Natural Muskrat. Made from Southern topped skins, of selected quality, perfectly matched. It is stylish, correctly fashioned, excellently tailored and nicely made. This is a coat we recommend as especial value at these low factory prices quoted. Has shirred shawl collar. Owing to its popularity this season, we are offering this splendid number in the three lengths; viz.: 40, 45 and 48 inches.

No. 3M8310A	Length, 40 inches, each	$220.00
No. 3M8310B	Length, 45 inches each	253.35
No. 3M8310C	Length, 48 inches, each	280.00

SEALINE COAT

This plain Sealine Coat, with shawl collar and bell cuffs, in strict adherence to the prevailing style, is a clever imitation of the more expensive Hudson Seal. It is admirably rich looking and this coat is unusually well made, splendidly lined and will give satisfactory service. The shawl collar and bell cuffs greatly adds to its attractiveness and at the low factory price it is offered in this selling, it is within the reach of all. It is a real genuine and honest value

No. 3M8144 Each $140.00

JANNEY, SEMPLE, HILL & CO.

W-W WRENCHES

Walden-Worcester.

INTERCHANGEABLE SOCKET WRENCH SETS

A complete, heavy duty socket wrench set for use by mechanics or millwrights in service station garage or general factory and mill service.

No. 716—12-inch Ratchet Wrench
No. 1135—5-inch Extension Bar.
No. 1139—9-inch Extension Bar.
No. 1105—Combination T and Offset Handle
No. 1102—Universal Joint
No. 1107—Brace Wrench
No. 1108—Brace Top
No. 1109—Plug Connectors (two)
No. 1110—Socket Connector

16 Hex. Sockets—$\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{16}$, $1\frac{1}{8}$.

11 Square Sockets—$\frac{3}{8}$, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, 1, $1\frac{1}{16}$, $1\frac{1}{8}$.

5 Open End Wrenches

No. 27—Inter-Changeable Socket Wrench Set—Box size 16x10x2¾; weight 25 lbs. Per set $27.00

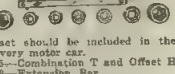
Assortment particularly selected to fit Ford cars.

No. 516—9-inch Ratchet Wrench
No. 1139—9-inch Extension Bar
No. 1102—Universal Joint
No. 1109—Plug Connections (two)
7 Sockets—Hexagonal $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$.
1 Socket—Square $\frac{7}{16}$

No. 8—Inter-Changeable Socket Wrench Set—Box size 10⅞x4x2¾; weight 7 pounds. Per set $10.00

SOCKET STOCK NUMBERS (Catalog Reference)		SOCKET SIZES	SIZES SCREW-BOLTNUTS SAE (Coarse Thread)	U.S. Std. Nuts	U.S. Cap Screws	U.S. Bolt Heads (Extra Long)
112		$\frac{3}{16}$				
114	214	$\frac{7}{16}$	$\frac{1}{4}$		$\frac{1}{4}$	
116	216	$\frac{1}{2}$	$\frac{5}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{1}{4}$
118	218	$\frac{9}{16}$	$\frac{3}{8}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{5}{16}$
	219	$\frac{19}{32}$		$\frac{3}{8}$		$\frac{3}{8}$
120	220	$\frac{5}{8}$	$\frac{7}{16}$		$\frac{7}{16}$	
122	222	$\frac{11}{16}$		$\frac{7}{16}$		$\frac{7}{16}$
124	224	$\frac{3}{4}$	$\frac{1}{2}$		$\frac{1}{2}$	
	225	$\frac{25}{32}$		$\frac{1}{2}$		$\frac{1}{2}$
	226	$\frac{13}{16}$		$\frac{9}{16}$		$\frac{9}{16}$
128	228	$\frac{7}{8}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{5}{8}$
	230	$\frac{15}{16}$	$\frac{5}{8}$			
	231	$\frac{31}{32}$		$\frac{5}{8}$		$\frac{5}{8}$
132	232	1	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{3}{4}$	$\frac{3}{4}$
	234	$1\frac{1}{16}$	$\frac{3}{4}$			
136	236	$1\frac{1}{8}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{7}{8}$	$\frac{7}{8}$
140	240	$1\frac{1}{4}$	$\frac{7}{8}$	$\frac{15}{16}$	1	$\frac{15}{16}$

Sockets—Sockets are machine made from the solid bar. Broaching depth is the thickness of the nut to be fitted, and broached 1-64 inch over the size of the nut. Sockets are counter drilled making extreme bolt size depth of socket ⅛-inch more than the thickness of the nut. The outside diameter of the socket size and taper have been designed to insure strength and service conditions. The broached end is countersunk slightly to relieve the square edges and to allow more rapid placing of socket on bolt head. All sockets are heat treated



This set should be included in the tool box of every motor car.

No. 1105—Combination T and Offset Handle
No. 1139—Extension Bar
No. 1109—Plug Connector
7 Sockets—Hexagonal $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$ and 1

No. 9W—Inter-Changeable Socket Wrench Set—Packed in waterproof canvas roll; weight 8½ lbs. Per set $4.50

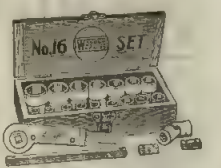
This set is similar in every respect to the No. 27 Set except that it does not contain the series of square sockets. It is especially well adapted for use in service stations, garages and repair shop, on all classes of automotive work.

No. 716—12-inch Ratchet Wrench
No. 1135—5-inch Extension Bar
No. 1139—9-inch Extension Bar
No. 1105—Combination T and Offset Handle
No. 1102—Universal Joint
No. 1107—Brace Wrench
No. 1108—Brace Top
No. 1109—Plug Connectors (two)
No. 1110—Socket Connector

16 Hex. Sockets—$\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{16}$, $1\frac{1}{8}$, $1\frac{1}{4}$.

5 Open End Wrenches

No. 26—Inter-Changeable Socket Wrench Set—Box size 16x10½x2¾; weight 19¼ lbs. Per set $21.00



A most desirable socket wrench set for owner's use and for general service where the purchase of the larger No. 27 set would not be warranted

No. 516—9-inch Ratchet Wrench
No. 1139—9-inch Extension Bar
No. 1102—Universal Joint

16 Sockets—Hexagonal $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1, $1\frac{1}{16}$, $1\frac{1}{8}$, $1\frac{1}{4}$.

Set—Box size 12x6¼x2⅝; weight 11 lbs. No. 16—Inter-Changeable Socket Wrench Per set $14.50

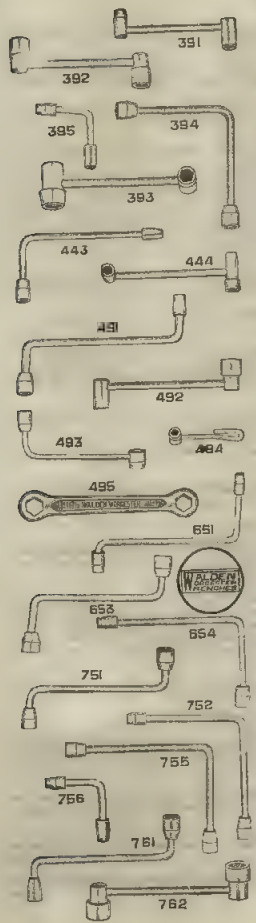
ANY WRENCH OR SOCKET MAY BE OBTAINED SEPARATELY

No. 100—Open End Wrenches (Set)	$1.50	No. 1108—Brace Top	$0.60	Nos. 112-118—Steel Sockets	$0.40
No. 516—Ratchet Wrench	2.75	No. 1109—Plug Connector	.35	Nos. 120-122	.60
No. 716—Ratchet Wrench	3.30	No. 1110—Socket Connector	.35	Nos 124-140	.75
No. 1102—Universal Joint	1.80	No. 1135—5-inch Extension Bar	.50	Nos 214-222	.40
No. 1105—Comb. T and Offset Handle	.60	No. 1139—9-inch Extension Bar	.60	Nos 224-230	.50
No. 1107—Brace Wrench	1.20	No. 1378—Brace Wrench	1.80	Nos 231-240	.65

W-W WRENCHES

Walden-Worcester.

INDIVIDUAL WRENCHES



No. 391—Double End Offset Wrench—Length over all 8 inches; socket sizes ⅝ and ½-inch. Recommended specifically for use on: Chevrolet, Liberty. Each..... .80

No. 392—Double End Offset Wrench—Length over all 9¼ inches; socket sizes ⅝ and ¾-inch. Recommended specifically for use on: Buick, Chandler, Chevrolet, Essex, G. M. C., Hudson, Oldsmobile, Republic, Scripps-Booth, Stewart, Stutz. Each..... 1.10

No. 393—Quadruple Socket Offset Wrench—Length over all 10⅛ inches; socket sizes ⅜, 1/2, ⅝, ¾-inch. Recommended specifically for use on Chevrolet, Grant, Paige. Each.... 1.80

No. 394—L Type Wrench—8x8 inch; socket sizes ⅝ and ⅞-inch. Recommended specifically for use on: Cadillac, Chandler, Chevrolet, Cleveland, Commerce, Dodge, Federal, Franklin, G. M. C., Haynes, Republic, Selden, Studebaker, Stutz. Each..... .85

No. 395—L Type Wrench—4x4 inches; socket sizes ½ and ⅝ inch. Recommended specifically for use on: Cadillac, Chalmers, Chandler, Chevrolet, Cleveland, Cole, Commerce, Dodge, Dort, Essex, Federal, Franklin, G. M. C., Grant, Haynes, Hudson, Hupmobile, International, Jordan, Lincoln, Mack, Marmon, Maxwell, Mitchell, Nash, Oldsmobile, Paige, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Wills St. Claire, Winton. Each..... .70

No. 443—L Type Wrench—9½x4½ inches; socket sizes ⅝ and ⅞ inch. Recommended specifically for use on: Buick, Cole, Lincoln. Each..... .80

No. 444—Triple Socket Offset Wrench—Length over all 9 inches; socket sizes ½, ⅝ and ⅞ inch. Recommended specifically for use on: Buick, Chandler, Dodge, Grant, Winton. Each..... .85

No. 491—Double End Offset Wrench—Length over all 10½ inches; socket sizes ⅝ and ¾ inch. Recommended specifically for use on: Chandler, Cleveland, Essex, Haynes, Maxwell, Pierce-Arrow, Selden, Studebaker. Each..... .80

No. 492—Double End Offset Wrench—Length over all 10 inches; socket sizes ⅞ and 1⅛ inch. Recommended specifically for use on: Cole, Maxwell. Each..... 1.10

No. 493—Double End Offset Wrench—Length over all 8¼ inches; socket sizes ⅝ and ¾ or ⅞ inch. Recommended specifically for use on: International, Maxwell. Each..... .80

No. 494—Offset Wrench—Length over all 6½ inches; socket size ½ inch. Recommended specifically for use on: Chalmers, Chandler, Chevrolet, Cole, Commerce, Federal, Ford, Franklin, Grant, Jordan, Marmon, Maxwell, Peerless, Pierce-Arrow, Republic, Selden, Stewart, Stutz, Wills St. Claire. Each..... .50

No. 495—Double End Box Type Wrench—Length over all 10 inches; socket sizes 1¼ and 1⅜ inches. Recommended specifically for use on: Buick, Chandler, Cleveland, Dodge, Dort, G. M. C., Jordan, Lincoln, Mack, Marmon, Maxwell, Mitchell, Oakland, Paige, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker, White. Each..... .90

No. 651—Double End Offset Wrench—Length over all 10 inches; socket sizes ⅞ and 1/inch. Recommended specifically for use on: Dodge, Pierce-Arrow, Stewart. Each.... .80

No. 652—Double End Offset Wrench—Length over all 11 inches; socket sizes ½ and ¾ inch. Recommended specifically for use on: Buick, Chandler, Cleveland, Cole, Dodge, Essex, Franklin, G. M. C., Grant, Hudson, Marmon, Mitchell, Oldsmobile, Paige, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Winton. Each..... .85

No. 654—L Type Wrench—10x6 inches; socket sizes ½ and ⅝ inch. Recommended specifically for use on Dodge. Each..... .80

No. 751—Double End Offset Wrench—Length over all 11¾ inches; socket sizes ⅝ and ⅜ inch. Recommended specifically for use on: Cadillac, Cleveland, Essex, G. M. C., Haynes, Jordan, Nash, Reo, Willys Knight. Each..... .80

No. 752—L Type Wrench—8x8 inches; socket sizes ⅞ and 1⅛ inch. Recommended specifically for use on: Cole, Dort, Lincoln, Paige, Scripps-Booth Stewart, Studebaker, Willys Knight Each..... .80

No. 755—L Type Wrench—10x7 inches; socket sizes ⅝ and ¾ inch. Recommended specifically for use on: Dort, Essex, Franklin, Hudson, Hupmobile, Jordan, Lincoln, Mack, Peerless, Stewart, Willys Knight. Each..... .80

No. 756—L Type Wrench—4x4 inches; socket sizes ½ and ⅝ inch. Recommended specifically for use on: Essex, Franklin, G. M. C., Hudson, Lincoln Oldsmobile, Pierce-Arrow, Selden, Stutz, White, Wills St. Claire, Willys Knight. Each..... .70

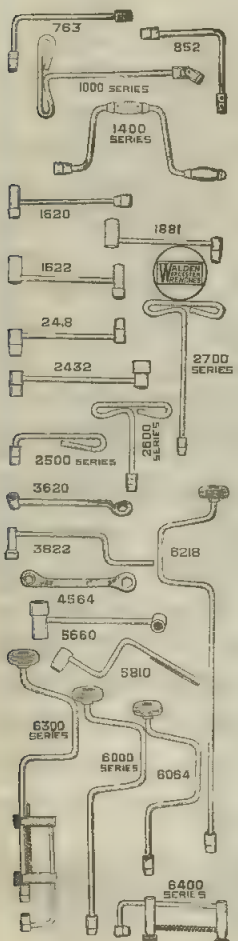
No. 761—Double End Offset Wrench—Length over all 10½ inches; socket sizes ⅝ and ¾ inch. Recommended specifically for use on: Chalmers, Commerce, Dort, Jordan, Liberty, Mitchell, Nash, Oldsmobile, Overland, Pierce-Arrow, Scripps-Booth, Stewart, Studebaker, Willys Knight. Each..... .80

No. 762—Double End Offset Wrench—Length over all 10¾ inches; socket sizes 1⅛ and 1 inch. Recommended specifically for use on: Buick, Cadillac, Chalmers, Chandler, Cleveland, Dodge, Dort, Essex, Federal, Ford, G M. C, Haynes, Hudson, Hupmobile, International, Jordan, Lincoln, Mack, Marmon, Maxwell, Mitchell, Nash, Oakland, Oldsmobile, Overland, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Willys Knight, Winton. Each..... 1.35

W-W WRENCHES

Walden-Worcester.

INDIVIDUAL WRENCHES



No. 763—L Type Wrench—6½x4¼ inches; socket sizes ⅜ and ⅞ inch. Recommened specifically for use on: Cole, Overland. Each..... $0.80

No. 852—L Type Wrench—6¾x6¾ inches; socket sizes ⅞ and ⅜ inch. Recommened specifically for use on: Fordson Tractor, Paige, Studebaker. See Fordson Tractor wrenches illustrated elsewhere in this catalog. Each..... .80

No. 1000 Series—Tee Flex and Universal Joint Socket Wrenches—See Tee Flex wrenches illustrated elsewhere in this catalog. Each..... 2.50

No. 1400 Series—See Tire and Rim wrenches illustrated elsewhere in this catalog. Each 1.10

No. 1620—Tomahawk, Triple Socket Wrench—This is the original Triple Socket Wrench trademark "Tomahawk," having ½-inch rod connecting the two sockets. The sockets are particularly shaped to increase their usefulness. ⅝-inch end socket used for spinning nuts on and off. Socket sizes ⅝ and ½ inch. Recommended specifically for use on: Federal, Ford, Franklin, G. M. C., Haynes, Hupmobile, Jordan, Liberty, Mack, Marmon, Mitchell, Nash, Oakland, Oldsmobile, Overland, Paige, Peerless, Pierce-Arrow, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Willys Knight. Each..... .70

No. 1622—Triple Socket Offset Wrench—Length over all 9 inches; socket sizes ½-inch hex., ⅝-inch hex., ⅞-inch sq. Recommended specifically for use on Maxwell. Each.. .90

No. 1881—Double End Offset Wrench—Length over all 9 inches, socket sizes ⅞-inch hex., ⅞-inch sq. Used on Ford cars. Each..... 1.20

No. 2418—Double End Offset Wrench—Length over all 9 inches; socket sizes ⅞ and ¾ inch. Recommended specifically for use on: Chandler, Chevrolet, Cleveland, Dodge, Dort, Federal, Ford, G. M. C., International, Liberty, Oakland, Paige, Pierce-Arrow, Reo, Selden, Stewart, Studebaker, Willis St. Claire. Each..... .90

No. 2432—Double End Offset Wrench—Length over all 11¼ inches; socket sizes 1 and ¾ inch. Recommended specifically for use on: Buick, Peerless, Reo. Each..... 1.15

Nos. 2500-2600-2700 Series—See Tee and Offset Handle Wrenches illustrated elsewhere in this catalog.

No. 3620—Combination Spark Plug and Cylinder Head Wrench—Length over all 11 inches; socket sizes ⅜ and ⅝ inch. Used on Ford cars. Each..... .80

No. 3822—Fly Wheel Socket Wrench—Socket size ⅜ inch Used on Ford car. Each. .70

No. 4564—Ratchet Wrench for Adjusting Ford Brake and Reverse Transmission Bands—Opposite end ⅜ inch for use on slow speed connecting lock nut. Used on Ford cars. Each..... 1.80

No. 5660—Triple Socket Offset Wrench—Length over all 10½ inches; socket sizes ⅜, ½ and ⅝ inch. Recommended specifically for use on: Buick, Cadillac, Chalmers, Chandler, Cleveland, Commerce, Dodge, Dort, Essex, Federal, Ford, G. M. C., Haynes, Hudson, Hupmobile, International, Jordan, Liberty, Lincoln, Mack, Maxwell, Mitchell, Nash, Oakland, Oldsmobile, Overland Pierce-Arrow Reo, Republic, Selden, Stewart, Studebaker, White, Willis St. Claire, Willys Knight, Winton. Each..... 1.30

No. 5810—Connecting Rod Socket Wrench for Ford Cars—Particularly designed for reaching the fourth connecting rod. Used on Ford cars. Each..... .60

No. 6000 Series—See Speed Wrenches illustrated elsewhere in this catalog.

No. 6064—Short Speed Wrench—Length over all 13⅜ inches; shank 5 inches; socket size ½ inch. Recommended specifically for use on: Cole, Ford, International, Lincoln, Marmon, Mitchell, Oldsmobile, Overland, Willis St. Claire. Each..... .55

No. 6218 Long Shank (20") Brace Speed Wrench—Length over all 28 inches; socket size ⅞ inch. Recommended specifically for use on: Buick, Cadillac, Cole, Ford, Stutz, White. Each..... 1.20

No. 6300 Series—See Nut and Bolt Speed Wrenches fully described elsewhere in this catalog. Each..... 3.00

No. 6400 Series—See Nut and Bolt Holding Attachment fully described elsewhere in this catalog. Each..... 2.00

WALDEN-WORCHESTER SERVICE SELECTIONS

Buick 4 and 6

392	$0 99
†443	.72
†*444	.83
495	.82
*653	.77
762	1 21
1018	2 50
1024	2 50
†2432	1 05
2716	.60
2718	.60
†*5660	1 20
6016	.88
6018	.88
6020	.88
6218	1 10

16 tools $17 53
*Owner's (4)
†Owner's (6)

Cadillac 51 to 59

*394	$0 77
*395	.66
*751	.72
*762	1 21
1022	2 50
*5660	1 20
6018	.88
6020	.88
6022	.88
6218	1 10

10 tools $10 80
*Owner's (51 to 59)

Chalmers C-35

224	$0 44
*395	.66
494	.44
716	3 30
*761	.72
*762	1 21
1018	2 50
1022	2 50
1139	.55
2322	.50
2716	.60
2718	.60
2720	.60
2722	.60
*5660	1 20
6016	.88
6018	.88
6022	.88
6024	.88

19 tools $19 94
*Owner's (C-36)

Chandler 1920-21

392	$0 99
394	.77
*395	.66
*444	.83
491	.71
494	.44
495	.82
716	3 30
*761	.72
*762	1 21
1018	2 50
1022	2 50
1139	.55
2322	.50
2716	.60
2718	.60
2720	.60
2722	.60
*5660	1 20
6016	.88
6018	.88
6022	.88
6024	.88

Chandler (Continued)

762	1 21
1018	2 50
1024	2 50
2418	.80
2716	.60
*5660	1 20
6016	.88

15 tools $15 68
*Owner's (1920-21)

Chevrolet 490-Bll

232	$0 55
*391	.72
*392	.99
*393	1 65
*394	.77
*395	.66
494	.44
1104	.99
01516	.77
2418	.80
2716	.60
2718	.60
2720	.60
6016	.88
6018	.88
6024	.88

17 tools $13 38
*Owner's (490-BII)

Cleveland 1920-21

394	$0 77
*395	.66
491	.71
495	.82
*653	.77
*751	.72
762	1 21
1016	2 50
1018	2 50
1024	2 50
2418	.80
2724	.60
*5660	1 20
6016	.88
6024	.88

15 tools $17 52
*Owner's (20-21)

Cole (1921)

*395	$0 66
443	.72
*492	.99
*494	.44
653	.77
752	.72
763	.72
1018	2 50
1024	2 50
2716	.60
2718	.60
2722	.60
2724	.60
2619	.55
2724	.60
6022	.88
6064	.77
6218	1 10

14 tools $13 02
*Owner's (1921)

Dodge 1921

394	$0 77
395	.66
*444	.83
495	.82
*651	.71
*653	.77
*654	.72
762	1 21
1016	2 50
1018	2 50
2418	.80
2716	.60
5660	1 20
6014	.88
6016	.88
6018	.88
6022	.88
6024	.88

19 tools $19 37
*Owner's (1921)

Dort 11-15-17-17A

116	$0 33
122	.44
232	.55
*395	.66
495	.82
716	3 30
752	.72
755	.72
*761	.72
762	1 21
1018	2 50
1020	2 50
1104	.99
1139	.55
*2418	.80
2716	.60
2718	.60
*5660	1 20
6016	.88
6018	.88
6024	.88

21 tools $21 85
*Owner's (11-15-17-17A)

Essex-Hudson '19'21

392	$0 99
*395	.66
491	.71
*653	.77
*751	.72
755	.72
756	.66
762	1 21
1016	2 50
1024	2 50
1028	2 50
2716	.60
2718	.60
2722	.60
2724	.60
*5660	1 20
6016	.88
6018	.88
6025	.88

20 tools $21 06
*Owner's (19-21)

Ford Car and Truck

VG2	$0 88
VG3	.55
494	.44
762	1 21
1018	2 50
1020	2 50
*1620	0 70
1881	1 10
*2418	.80
2716	.60
2720	.60
3020	.75
3822	.66
*4564	1 30
*5660	1 20
*5810	.55
6018	.88
6020	.88
6022	.88
6064	.77
6218	1 10
6316	3 00
6318	3 00

23 tools $26 85
*Owner's Selection

Franklin 1917 1920

394	$0 77
*395	.66
494	.44
*653	.77
*755	.72
756	.66

10 tools $13 75
*Owner's (1917-1920)

Grant HX

*393	$1 65
*395	.66
444	.83
494	.44
653	.77
1018	2 50
6016	.88
6018	.88
6025	.88

9 tools $9 49
*Owner's (HX)

Haynes 50

394	$0 77
*395	.66
*491	.71
751	.72
*762	1 21
*1620	.70
5660	1 20
6018	.88

8 tools $8 85
*Owner's (50)

Hudson-Essex (1921)

392	$0 99
*395	.66
491	.71
*653	.77
*755	.72
756	.66
762	1 21
1018	2 50
1024	2 50
1028	2 50
2716	.60
*5660	1 20
6018	.88
6020	.88
6022	.88
6064	.77

20 tools $21 06
*Owner's (1921)

Hupmobile R

*395	$0 66
*755	.72
762	1 21
1016	2 50
1018	2 50
1020	2 50
*1620	.70
5660	1 20
6016	.88
6024	.88

10 tools $13 75
*Owner's R)

Jordan

*395	$0 66
494	.44
495	.82
751	.72
755	.72
*761	.72
762	1 21
1020	2 50
1620	.70
2718	.60
2728	.60
*5660	1 20
6016	.88
6018	.88
6020	.85
6418	2 00

16 tools $15 53
*Owner's (M)

Liberty 10C

391	$0 72
*761	.72
1020	2 50
1022	2 50
*1620	70
2519	50
2525	.50
2716	.60
*5660	1 20
6018	.88
6020	.88

12 tools $12 50
*Owner's (10C,

Lincoln 1921-22

*395	$0 66
443	.72
*495	.82
752	.72
*755	.72
756	.66
762	1 21
1018	2 50
1020	2 50
1024	2 50
2716	.60
*5660	1 20
6018	.88
6020	.88
6022	.88
6064	.77

16 tools $18 22
*Owner's (1921-22)

Marmon 1920 21

*395	$0 66
494	.44
495	.82
*653	.77
*762	1 21
1016	2 50
1018	2 50
1020	2 50
*1620	.70
2720	.60
6016	.88
6018	.88
6020	.88
6064	.77

14 tools $16 11
*Owner's (1920-21)

Maxwell 25

395	$0 66
*491	.71
*492	.99
*493	.72
*494	.44
*495	.82
762	1 21
1016	2 50
1018	2 50
1022	2 50
*1022	.88
2716	.60
2718	.60
2720	.60
5660	1 20
6018	.88
6018	.88
6022	.88

18 tools $19 57
*Owner's (25)

Reo Car T-U and Speed Wagon F

112	$0 33
120	.44
*395	.66
495	.82
653	.77

Reo (Continued)

751	.72
762	1 21
1104	.99
2418	.80
*2432	1 05
2519	.50
2716	.60
*5660	1 20
6016	.88
6022	.88
6024	.88

16 tools $12 73
*Owner's (T-U

Scripps-Booth B39-F43

392	$0 99
*395	.66
495	.82
*653	.77
*752	.72
*761	.72
*762	1 21
1020	2 50
1620	.70
2716	.60
2718	.60
2720	.60
2722	.60
6016	.88
6018	.88
6064	.77

17 tools $15 01
*Owner's (B39-F43)

Studebaker All 1921

*394	$0 77
†*395	.66
491	.71
495	.82
†752	.72
†761	.72
762	1 21
†852	.82
1024	2 50
*1620	.70
*2418	.80
2716	.60
2724	.60
†*5660	1 20
6016	.88
6018	.88
6022	.88
6024	.88

18 tools $16 35
*Owner's (Lt. 6)

Stutz S-G-H-K

392	$0 99
*394	.77
*395	.66
494	.44
736	.66
762	1 21

Stutz (Continued)

*850	90
1018	2 50
1020	2 50
1028	2 50
1620	.70
2522	.50
2716	.60
2718	.60
6016	.88
6018	.88
6218	1 10

18 tools $1[illegible] 98
*Owner's (S-G-H-K)

Wills St Clair 1921

*395	$0 66
*494	.44
756	.66
1018	2 50
1024	2 50
*2418	.80
2519	.50
*5660	1 20
6016	.88
6064	.77

10 tools $10 91
*Owner's (1921)

Willys-Knight 1921

*751	$0 72
*762	.72
755	.72
*756	.66
*761	.72
762	1 21
1620	.70
2718	.60
*5660	1 20
6016	.88
6018	.88

11 tools $9 01
*Owner's (1921)

Winton 1921

*395	$0 66
*444	.83
*653	.77
*762	1 21
1018	2 50
1024	2 50
*5660	1 20
6016	.88
6018	.88
6022	.88

10 tools $12 31
*Owner's (192[illegible]

Mitchell 1920

*395	$0 66
495	.82
*653	.77
761	.72
762	1 21
1020	2 50

WALDEN-WORCHESTER SERVICE SELECTIONS

Mitchell (Continued)

*1620	70
2724	60
*5660	1 20
6018	.88
6020	.88
6064	.77

12 tools $11.71
*Owner's (1920)

Nash 4 and 6

*395	$0.66
751	.72
*761	.72
762	1 21
1016	2.50
1018	2.50
1020	2 50
1024	2 50
1620	70
*5660	1 20
6016	88
6024	88

12 tools $16 97
*Owner's (4 & 6)

Oakland 31C

395	$0 82
762	1 21
1018	2 50
*1620	70
*2418	80
2718	.60
2720	.60
*5660	1 20
6016	88

Oakland (Continued)

6018	88
6022	88

11 tools $11 07
*Owner's (34C)

Oldsmobile 37

392	$0 99
*395	.66
653	.77
756	.66
*761	.72
*762	1.21
1016	2 51
1020	2 50
1620	.70
2716	.60
2718	.60
2720	60
*5660	1 20
6016	88
6018	88
6020	88
6064	77

13 tools $18 00
*Owner's (37)

Paige 1921

393	$1 05
*395	.66
495	.82
*653	.77
*752	.72
852	.82
*1620	.70
*2418	80

Paige (Continued)

2718	.60
6016	88
6018	.88

11 tools $9.30
*Owner's (1931)

Peerless Series 6

*395	$0 66
494	44
*653	77
755	72
752	1 21
1018	2 50
1020	2 50
1024	2 50
*1620	70
*2432	1 05
2525	50
2718	60
2720	60
6016	.88
6019	88
6020	88

16 tools $17 39
*Owner's (Series 6)

Pierce-Arrow Truck---(X5-R10 and Car 32-38

†*395	$0.66
491	.71
*494	.44
495	.82
651	.71
†*653	.77
†756	.66

Pierce-Arrow (Continued)

761	.72
†*762	1.21
1018	2 50
1020	2 50
1028	2.50
†*1620	.70
2418	.80
2716	60
2718	.60
2724	60
2724	60
*5660	1 20
6016	88
6018	88
6020	88
6024	88

23 tools $22 82
*Owner's (32)
*Owner's (38)

Overland (4)

*761	$0 72
*762	1.21
*763	72
1018	2 50
1020	2 50
1620	70
2718	.60
*5660	1 20
6016	.88
6018	.88
6020	.88
6064	.77

12 tools $13.56
*Owner's (4)

Commerce Truck-T

394	$0 77
395	66
491	.44
761	72
1018	2 50
1021	2 50
5660	1 20
6018	.88

8 tools $9 67

Federal Truck SD-TE-UD-WE

394	$0 77
395	.66
491	11
762	1 21
1024	2.50
1025	2 50
1620	.70
2418	.80
5660	1 20
6016	.88
6018	.88
6020	.88
6024	.88

13 tools $14.30

G. M. C. Truck 31-41-K101

392	$0 99
394	77
395	66
495	.82
653	.77
751	72
756	66
762	1 21
1018	2 50
1024	2 50
1620	70
2418	80
2720	.60
2724	60
5660	1 20
6016	88
6018	88

17 tools $17 26

International Trucks-L

395	$0 66
493	.72
762	1.21
2418	.80
5660	1.20
6016	.88
6064	.77

7 tools $6.24

Mack Truck AB-AC

395	$0 66
495	82
755	72
762	1 21
1018	2 50
1020	2 50
1024	2 50
1028	2 50
1620	70
5660	1.20
6018	.88
6020	88
6024	88

12 tools $11 82

Selden Truck (Continued)

495	82
756	66
762	1 21
1024	2 50
1028	2 50
1620	.70
2418	80
5660	1 20
6016	88
6018	88
6020	88
6024	88
6026	88

17 tools $17 37

13 tools $17 95

Republic Truck 10-19A

392	$0 99
394	77
395	.66
494	44
495	82
653	.77
762	1 21
1028	2 50
1620	70
5660	1 20
6016	88
6018	88

12 tools $11 82

Selden Truck

1½A	3½A
2½A	5A

394	$0.77
395	.66
491	.71
494	.44

Stewart Truck 12-6-7-11 7x-10

392	$0 99
395	66
494	.44
495	.82
651	.71
752	72
755	72
761	72
762	1 21
1020	2 50
1024	2 50
1028	2 50
1620	70
2418	.80
2525	50
5660	1 20
6016	88
6018	.88
6020	.88
6022	.88
6024	.88
6026	.88

22 tools $22 97

SERVICE AND OWNERS' SELECTIONS

The charts show suggested selections of stock tools which are especially adapted for use on the various makes of cars as listed. The selections are grouped in two classes; the tools as listed being recommended for service station and garage mechanic's use, while the numbers prefixed by an asterisk represent the most useful tools for use by the car owner.

Owners of motor cars and trucks are entitled to real service.

Manufacturers of motor vehicles are increasingly impressed with the value of service and positive need for improvement. Co-operating with factory service departments, Walden-Worcester, Inc., have been able to select from their complete line certain wrenches best suited for work on certain cars.

The Service Selections tell you the particular part of the particular car you are interested in.

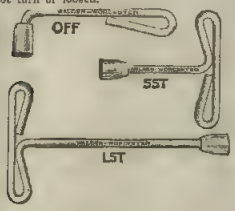
Proper tools are recognized as essential for good service, both for economy of time and character of the work done.

W-W WRENCHES

Walden-Worcester.

TEE AND OFFSET HANDLE SOCKET WRENCHES

Wire handle construction and machined turned sockets make it possible to produce an equally well made and serviceable tool at much less cost than usual drop forged wrenches. Sockets are steel, machine turned from solid bar and broached accurately to size. Wire handles are proper size and class of material to guarantee service. Sockets are so fastened to the wire they will not turn or loosen.



SIZE	OFF	SST	LST
1/16	2514	2614	2714
1/8	2516	2616	2716
9/16	2518	2618	2718
19/32	2519	2619	2719
5/8	2520	2620	2720
11/16	2522	2622	2722
3/4	2524	2624	2724
25/32	2525	2625	2725
13/16	2526	2626	2726
7/8	2528	2628	2728

No. 2500 Series—Offset Socket Wrenches— Handles 7 inches, 10 sizes as listed. All sizes—Each $0.56

No. 2600 Series—Short Shank Tee Handle Wrenches— Handle 6 inches, shank 8 inches, 10 sizes as listed. All sizes—Each... .68

No. 2700 Series—Long Shank Tee Handle Wrenches— Handle 6 inches, shank 12 inches, 10 sizes as listed. All sizes—Each.. .80

UNIVERSAL JOINT TEE HANDLE WRENCHES

"Tee-Flex" Wrenches have met with such great success during the past two years that one more has been added with a 7/8-inch hex. opening, particularly for cylinder to base nuts on truck and tractor motors

No. 1016—Length over all 13¾ inches, socket size ½ inch. Recommended specifically for use on: Cleveland, Dodge, Essex, Franklin, Hudson, Hupmobile, Marmon, Maxwell, Nash, Oldsmobile. Each..... $2.50

No. 1018—Length over all 13¾ inches; socket size 9/16 inch. Recomended specifically for use on: Buick, Chalmers, Chandler, Cleveland, Cole, Commerce, Dodge, Dort, Ford, Franklin, G. M. C., Grant, Hupmobile, Lincoln, Mack, Marmon, Maxwell, Nash, Oakland, Overland, Peerless, Pierce-Arrow, Stutz, Wills St. Claire, Winton. Each. 2 50

No. 1020—Length over all 13¾ inches; socket size 5/8 inch, Recommended specifically for use on: Dort, Ford, Hupmobile, Jordan, Liberty, Lincoln, Mack, Marmon, Mitchell, Nash, Oldsmobile, Overland, Peerless, Pierce-Arrow, Scripps-Booth, Stewart, Stutz. Each 2 50

No. 1022—Length over all 13¾ inches; socket size 11/16 inch. Recommended specifically for use on Cadillac, Chalmers, Liberty, Maxwell. Each 2.50

No. 1024—Length over all 13¾ inches. socket size ¾ inch. Recommended specifically for use on: Buick, Chandler, Cleveland, Cole, Essex, Federal, G. M. C., Lincoln, Mack, Nash, Peerless, Selden, Stewart, Studebaker, Wills St. Claire, Winton. Each 2.50

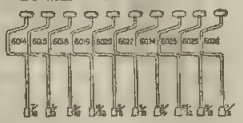
No. 1028—Length over all 13¾ inches; socket size 7/8 inch. Recommended specifically for use on: Federal, Mack, Pierce-Arrow, Republic, Selden, Stewart, Stutz, White. Each 2.50

STEEL OPEN END WRENCHES

Thin stamped wrenches are most useful in many places. Special steel used to give strength and wearing qualities.

No. 100 Set—Sizes 1x¾ inch, ⅞x⅝ inch, ¼x⅞ inch; weight, per set, 1¼ pounds. Per set $1.35

SPEED WRENCHES



7/16	1/2	9/16	19/32	5/8	11/16	3/4	25/32	13/16	7/8
6014	6015	6016	6018	6019	6020	6021	6022	6024	6025	6026	6028

Long shank brace socket wrenches are used as speed tools in assembling and dismantling cars. Are most efficient when used on a series of the same sized nuts as on cylinder heads. To gain the most time in removing nuts first release the nut with an offset socket wrench then spin nut off with Brace or Speed Wrench. These tools are big time savers and considered indispensable in garages where they have been tried.

No. 6000 Series—All sizes. Each.... $0.55

No. 600 Set Speed Wrenches—This set includes one each of the ten sizes listed above. Price complete $5.50

BRACE RIM WRENCHES

5/8	11/16	3/4	13/16	7/8
1420	1422	1424	1426	1428

There is only one size nut on any rim so that this solid handle tool fills all requirements (no loose socket to be misplaced).

RIM SIZES

5/8 1420	Kelsey	1424
	Ford	1420
	Saxon	1424
	Simplex	1424
11/16 1422	Firestone	1424
	Goodrich	1420
	Fisk-Dem	1424
	Corman	1424
3/4 1424	Stan-Weld	1422
	Baker	1420
	Buick	1424
	Continental	1424
	Detroit	1422
13/16 1426	Stan-Weld No. 2 Universal	1420
7/8 1428	Fisk	1424
	Goodyear	1424

Buick	1424
Cadillac	1420
Chandler (1920)	1424
Chandler (1921)	1422
Chevrolet	1424
Cleveland	1422
Dodge (1918-20)	1424
Dodge (1921)	1420
Dort	1424
Essex	1420
Ford	1420
Gardner	1424
Haynes	1422
Hudson	1420
Hupmobile	1420
Jordan	1422
Locomobile	1422
Maxwell 1420,	1424
Nash	1422
Oakland	1424
Oldsmobile	1424
Overland	1424
Packard	1422
Paige	1420
Peerless	1424
Pierce-Arrow	1424
Reo	1424
Scripps-Booth (1920-21)	1420
Studebaker	1420
Velie	1422
Willys-Knight	1424
Winton	1422

No. 1400 Series. All Sizes. Each 1.10

W-W WRENCHES

Walden-Worcester.

NUT AND BOLT HOLDING ATTACHMENT

As applied to Tee Handle and Speed Wrenches.

As applied to Speed Wrench

As applied to Tee-Handle Wrenches.

This attachment may be used in connection with either the brace speed wrenches (6000 series) or the long shank Tee handle wrenches (2700 series).

As this attachment can be used in speed and Tee handle wrenches with different socket sizes it can be used on nuts having different bolt head sizes. Also the attachment may be removed, leaving the wrenches ready for general work.

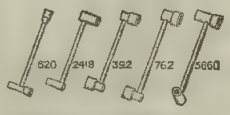
No. 6300 Series—Consists of No. 6316, ¼ inch and No. 6318 ⅜ inch. Each....$3.00

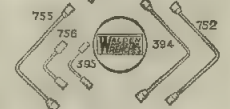
GARAGE SERVICE SET

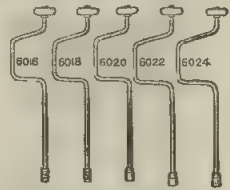
A selection of wrenches adapted for general service work on any motor car.

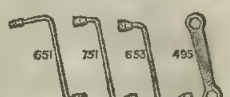
The No. 23 Set replaces our No. 30 Set which has been sold for many years. After careful study of garage service stations in all parts of the country this new selection is offered to the trade. In this new line-up only the most popular sizes of speed wrenches are included. Particular attention has been paid to the selection of L type and double-end offset wrenches which have been found most useful for general garage service work.

Two of the Tee Flex or universal joint wrenches so handy in reaching inaccessible nuts, bolts and cap screws complete the usefulness of this set.









Each different wrench is fully illustrated and described elsewhere in this catalog

Garage owners will instantly recognize the utility of this assortment.

These 23 wrenches, some with two or three socket sizes, make possible 38 different combinations.

Offset wrenches	17
L-wrenches	10
Speed wrenches	5
Tee-handle wrenches	2
Tee-flex wrenches	2
Box type wrenches	2
Total	38

No. 23 Set—Packed in plain wooden case 20½x7x5 inches; weight, 34 pounds. Per set $32 00

ADAPTIONS—NO. 23 GARAGE SERVICE SET

A Few of the Many Uses.

BUICK

Front Axle	
Front wheel—hub flange	5660
Hub nut	405
Spindle pivot	762-5660
Spring clips	762
Spring shackles front	5660
Spring shackles rear	5660
Steering arm	762
Tie rod	653-2418
Tie rod clevis	2418-1620
Rear Axle	
Differential support	653
Rear axle housing front	1620-1020-2720
Rear axle housing rear	1020
Rear spring pivot	2418-762
Rear wheel to brake drum	5660
Spring clips	762
Spring shackles rear	495
Universal joint housing	1018-2418
Motor Unit	
Connecting rod	651-2418
Cover for timing gears	6018
Crank case to base	6016
Exhaust manifold to cyl. block	2418-6018
Fly-wheel housing	1518
Generator support	1018
Intake manifold to cyl. block	2418-6018
Main bearing	653-2418
Motor support rear	5660-653
Steering gear case cover	1620
Steering gear case support	653
Tappet saddle strap	1018
Transmission cover	6018
Water cylinder inlet	2418

HUDSON

Front Axle	
Spring shackles front	5660-392
Spring shackles rear	5660-392
Steering arm ball	762
Tie rod	5660
Tie rod clevis	5660-765
Rear Axle	
Bearing adjustment	755-653
Differential case	395-2418
Differential support	653-392
Rear axle housing front	395-762
Rear axle housing rear	395-6018
Rear wheel to brake drum	752
Spring clips	5660-653
Spring shackles front	5660-392
Spring shackles rear	5660-392
Motor Unit	
Connecting rod	755-751
Cover for timing gears	2716-395
Crank case to base	6018-395
Cylinder to base	392
Cylinder head	653
Fan adjustment	653-755
Main bearing	765-653
Motor support front	653
Motor support rear	653
Radiator support	392-5660
Starting motor support	765-653
Steering gear case support	653
Transmission support	653
Water cylinder outlet	395

CHEVROLET Model 490

Front Axle	
Front wheel—hub flange	752
Hub nut	762
Spindle pivot	2418
Spring clips	394
Steering arm	5660
Tie rod	1620-2418
Tie rod clevis	2418-395
Rear Axle	
Differential case	2418-395
Hub nut	5660
Rear axle housing front	2418-394
Rear axle housing split	395-6016
Rear wheel to brake drum	2720
Ring gear	6018-395
Spring clips	392-394
Torque tube front	395
Torque tube rear	2418-394

W-W WRENCHES

Walden-Worcester.

ADAPTIONS—NO. 23 GARAGE SERVICE SET

A Few of the Many Uses.

CHEVROLET Model 490

Motor Unit	
Carburetor to intake manifold	395
Connecting rod	651-395
Cylinder head	6024-394
Exhaust manifold to cyl. block	394
Fly-wheel to crank shaft	395-6018
Generator support	395
Intake manifold to cyl. block	395
Main bearing	394-653
Motor support front	394
Radiator support	395
Starting motor support	395
Transmission cover	395
Transmission support	394-2720
Wrist pin	395
Valve rocker arm support	395

DORT

Front Axle	
Front wheel—hub flange	5660-6022
Hub nut	762
Spring clips	751
Spring shackles front	2418-653
Spring shackles rear	2418-653
Steering arm	762
Tie rod	653-2418
Tie rod clevis	751-395
Rear Axle	
Hub nut	762
Rear axle housing front	653-2418
Rear axle housing split	2418-6018-395
Rear spring pivot	495
Spring clips	751-2418
Spring shackles front	5660
Motor Unit	
Carburetor to intake manifold	395
Connecting rod	762-5660
Cover for timing gears	395-6018
Crank case to base	6018-2716
Cylinder to base	1020-751
Cylinder head	653-6024
Exhaust manifold to cyl. block	395
Fly-wheel housing	395
Generator support	395-6018
Intake manifold to cylinder block	395
Main bearing	758-653
Motor support front	395-2418
Motor support rear	395-2418
Radiator support	755
Starting motor support	395-2418
Transmission cover	6016-2716-395
Transmission support	395

OAKLAND MODEL 34-C

Front Axle	
Front wheel—hub flange	752-6022
Hub nut	5660
Spindle pivot	495
Spring clips	653-2418
Spring shackles front	2418-5660
Spring shackles rear	2418-5660
Steering arm	762
Tie rod	392-2418
Tie rod clevis	752
Rear Axle	
Rear axle housing front	5660
Rear axle housing split	1620-751
Rear wheel to brake drum	752-6022
Spring clips	653-2418
Spring perch to housing	1620-751
Spring shackle front	762-392
Spring shackles rear	2418-5660
Motor Unit	
Connecting rod	762-651
Cover for timing gears	6016-1620
Crank case to cylinder block	2418-6018
Cylinder head	6022-5660
Exhaust manifold to cyl. block	2418
Fly-wheel to crankshaft	2720-751
Fly-wheel housing	2720-1620
Generator support	1620
Intake manifold to cylinder block	2418
Main bariog	751-651
Motor support front	2720
Motor support rear	2720
Radiator support	5660
Starting motor support	2418
Steering gear case support	1620
Transmission cover	2716
Transmission support	751-2418
Water cylinder outlet	2418

[illegible]

Front Axle	
Drag Link	651
Front wheel—hub flange	653-6024
Hub nut	762
Spindle pivot	5660
Spring clips	653
Spring shackles front	653-2418
Spring shackles rear	653-2418
Steering arm	762
Tie rod	651-2418
Tie rod clevis	653-2418
Rear Axle	
Differential support	653
Hub nut	762
Rear axle housing front	6018-651
Rear axle housing rear	651-758
Rear wheel—hub flange	653-6024
Spring clips	653
Spring shackles front	653-2418
Spring shackles rear	653-2418
Motor Unit	
Connecting rod	653-394
Cover for timing gears	6016-395
Crank case to base	752-6022-6016
Cylinder head	752-6022
Exhaust manifold to cyl. block	395-6018
Fan adjustment	2720
Fly-wheel housing	395
Intake manifold to cylinder block	395
Main bearing	653-394
Motor support front	6018-651
Motor support rear	653-6024
Transmission cover	395
Water cylinder inlet	2418-651
Water pump	1018

CADILLAC

Rear Axle	
Brake support	752
Differential support	762
Rear axle housing front	3020-751
Rear axle housing rear	3020-761
Rear wheel to brake drum	751
Spring clips	762
Spring perch to housing	395
Spring shackles rear	495
Motor Unit	
Connecting rod	751
Cover for timing gears	395-6018
Crank case to base	6020-2720-761
Cylinder head	6022-5660
Distributor housing	395
Exhaust manifold to cyl. block	395
Fan housing	395-6018
Fly-wheel to crankshaft	5660-6022
Generator support	395
Heater to intake manifold	395-1620
Intake manifold to cylinder block	395-2418
Main bearing	394-5660
Motor support front	394
Oil pan drain plug	762
Radiator support	762
Steering gear case cover	395
Transmission bottom	395
Transmission cover	395-6016-2716
Transmission support	5660
Water pump drain	394

ESSEX

Rear Axle	
Bearing adjustment	653
Rear axle housing front	752-395
Rear axle housing rear	752-395
Rear wheel to brake drum	752
Rear wheel—hub flange	753
Spring clips	5660
Spring shackles front	5660-653
Spring shackles rear	653
Motor Unit	
Clutch housing	2716-395
Connecting rod	651-752-395
Cover for timing gears	6018-2716-395
Cover for valve guides	756
Crank case to base	6016-2716-395
Cylinder head	751
Exhaust manifold to cyl. block	395
Fan adjustment	653
Fly-wheel to crankshaft	755
Main bearing	653-755
Motor support front	653
Motor support rear	653
Rocker arm bracket	395
Rocker arm cover	395
Rocker arm pin	755-5660
Transmission cover	395-2716
Transmission support	[illegible]
Water cylinder inlet	395

W-W WRENCHES

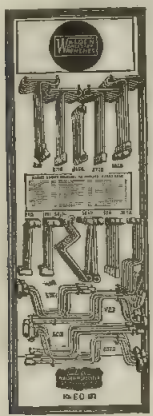
Walden-Worcester.

FOR USE ON FORD CARS

NO. 80 DISPLAY AND STOCK SET

Special Wrenches for Ford Car

Wrenches for Ford cars are in constantly increasing demand. Walden-Worcester Wrenches are original models. This free Display Board allows you to display your stock and will multiply your sales.



These free Display Boards have wooden backs, the front is of sheet metal handsomely lithographed in black and golden rod, the hooks are held by nut and check nut and there is no possibility of the board warping out of shape. An ornament to any store and a valuable sales producer.

5	—VG2	$0.88	$4.40
5	—VG3	.55	2.75
5	—1018	2.50	12.50
5	—1020	2.50	12.50
5	—1620	.70	3.50
5	—1881	1.10	5.50
5	—2418	.80	4.00
5	—2718	.60	3.00
5	—2720	.60	3.00
5	—3822	.66	3.30
5	—4564	1.30	6.50
5	—5660	1.20	6.00
5	—5810	.55	2.75
5	—6018	.88	4.40
5	—6020	.88	4.40
5	—6064	.77	3.85
80	Wrenches	Total	$82.00

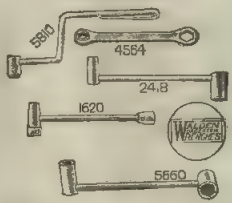
No. 80—Display and Stock Set Wrenches—Per set (With Display Board).....$82.00

One set in a box.

DIRECTORY OF WRENCHES

Name of Part	Wrench
FRONT AXLE	
Ball socket	6018-2418
Front radius rod	5660
Front spring clip	2418
Front spring hanger	5660
Front spring perch	5660
Spindle bolt	5660
Spindle bolt nut	2418
Spindle connecting rod	5660
Steering yoke clamp	2418
REAR AXLE	
Axle housing	6064-1620
Brake shoe support	1626-2418
Differential case	2418
Differential drive gear	1620-6064
Drive shaft roller bearing	2720-1620
Hub nut	5660
Radius rod	5660
Rear spring clip	5660
Rear spring hanger	5660
Rear wheel to brake drum	5660
MOTOR	
Carburetor flange (On cars without self starter)	1018
Commutator case support	6018-2718
Commutor case support (Od cars with self starter)	6020-2720
Connecting rod	1020-5810
Crank case	6018-2718
Crank case arm	2418
Crank case lower cover	1620-6064
Crank shaft bearing	1881-2418
Cylinder cover	6018-2718
Cylinder cover (On cars with self starter)	6020-2720
Cylinder head	6020-1020-1620
Cylinder valve cover	1018
Fan adjustment	6018-2718
Fan bracket	2418
Fly wheel	3822
Inlet and exhaust clamp	1018-2418
Magnet	6018-2718
Motor support, front	6020-1620
Piston pin locking screw	2718-2418
Radiator support	VG-2 VG-3
Valves	1620-1620
Water cylinder inlet connection	1620
Water cylinder outlet connection	
STEERING ASSEMBLY	
Steering post bracket	2418
Steering tube flange	6064
TRANSMISSION	
Brake adjustment	4564
Brake and reverse support	2418
Clutch pedal support	2418
Controller shaft, bracket	2418
Hub brake rod support	1620
Reverse adjustment	4564
Transmission cover	6018
Universal ball cap	1018-2718-2418
MISCELLANEOUS	
Body bracket	5660
Dash bracket to dash	1620-6064
Front fender iron	2418
Muffler	1620-6064
Running board	1881
Running board to fender	1881

NO. 57 SET



A practical and most useful set of wrenches for owner's use.

No. 57 Set—Includes five wrenches: Nos. 1620, 5810, 5660, 4564 and 2418; weight per set 5¼ lbs. Per set.....$4.55

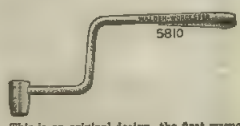
SERVICE WRENCHES FOR FORD CARS

This is the original Triple Socket Wrench, trademark "Tomahawk," having ⅛ inch rod connecting two sockets. Used on: Axle housing, brake shoe support, crank case lower cover, cylinder head, dash bracket to dash, differential drive gear, drive shaft rolled bearing, motor support, front, muffler, water cylinder inlet connection, water cylinder outlet connection.

No. 1620—Triple Socket Wrench—Socket sizes ⅜ and ½ inch. Each.....$0.70

Used on: Crank case lower cover, differential drive gear and rear axle housing.

No. 494—Single Socket Offset Wrench—Length over all 5⅛ inches; socket size ⅜ inch. Each.....$0.44



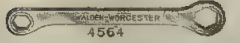
This is an original design, the first wrench made to reach the fourth connection without removing the engine from the car. Fits all connecting rod cap nuts. Includes the fourth connecting rod. Be sure you get the wrench with all right angle bends and loop handle. No. 5810 stamped on handle.

No. 5810—Connecting Rod Wrench—Each.....$0.55

W-W WRENCHES

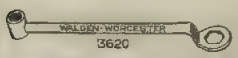
Walden-Worcester.

FOR USE ON FORD CARS



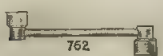
One of the most valuable tools to an owner on account of the ease in taking up bands.

No. 4564—Ratchet Wrench—$\frac{11}{16}$ inch hex opening particularly designed for use on the Ford brake and reverse transmission bands; opposite end $\frac{11}{16}$ inch for use on slow speed connecting lock nut. Each $1.80



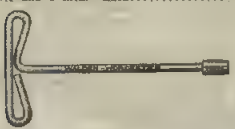
This wrench is used on: Cylinder head, spark plug, water cylinder inlet, water cylinder outlet. The $\frac{11}{16}$ inch hex, type opening has been so designed as to fit down squarely on the spark plug which is not true using usual claw or open end type. The $\frac{3}{4}$ inch socket has been shaped to make it possible to take all cylinder head cap screws, even the two under the dash on latest models.

No. 3620—Spark Plug and Cylinder Head Wrench—Length over all 11 inches; socket sizes $\frac{11}{16}$ and $\frac{3}{4}$ inch. Each.....$0.75



Used on: Rear spring perch, Truck, rear spring clip

No. 762—Double Socket Offset Wrench—Length over all 10$\frac{5}{8}$ inches; socket sizes, 1$\frac{1}{4}$ and 1 inch. Each.....$1.21

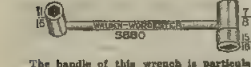


This wrench is used on: Commutator case, crank case, cylinder cover, fan adjustment, magnet, radiator support and universal ball cap.

No. 2718—Tee Handle Wrench—Socket $\frac{7}{8}$ inch, handle 6 inches, shank 12 inches. Each $0.80

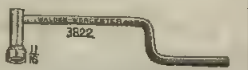
This wrench is used on: Commutator case support (On cars with self starter), cylinder cover (On cars with self starter), drive shaft roller bearing.

No. 2720—Tee Handle Wrench—Socket $\frac{15}{16}$ inch, handle 6 inches, shank 12 inches Each $0.80



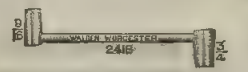
The handle of this wrench is particularly designed for heavy duty. Will fit the following: Body bracket, front radius rod, front spring perch, front spring hanger, radius rod, rear hub nut, rear spring clip, rear spring hanger, rear wheel to brake drum, spindle bolt, spindle connecting rod. Truck: Brake support, rear axle housing split, rear spring hanger

No. 5860—Triple Socket Offset Wrench—Length over all 10$\frac{1}{2}$ inches; socket sizes $\frac{11}{16}$, $\frac{3}{4}$ and $\frac{13}{16}$ inch. Each.....$1.20



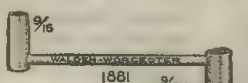
This wrench is used on fly wheel cap screws, heretofore considered an impossible place for a socket wrench. An ugly place made accessible.

No. 3822—Socket size $\frac{11}{16}$ inch hex.
Each $0.66



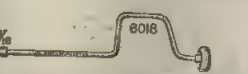
This wrench will fit the following: Brake and reverse support, brake shoe support, clutch pedal support, crank case arm, crankshaft bearing nut, crankshaft rear bearing bolt, dash bracket to dash, differential case, fan bracket, front fender iron, front spring clip, inlet and exhaust clamp, radiator support, spindle bolt nut, steering post bracket, steering yoke clamp, universal ball cap. Truck: Rear axle housing, front, rear axle housing, rear.

No. 2418—Double Socket Offset Wrench—Length over all 9 inches; socket sizes $\frac{7}{8}$ and $\frac{9}{16}$ inch. Each.....$0.80



This wrench will fit the following: Crank shaft bolt, piston pin, locking screw, running board, running board to fender.

No. 1881—Length over all 9 inches; socket sizes, $\frac{7}{8}$ inch hex and $\frac{7}{8}$ inch square.
Each $1.10



This wrench is used on: Commutator case support, crank case, cylinder cover, fan adjustment, magnet, transmission cover.

No. 6018—Long Shank (11") Brace Speed Wrench—Length over all 19$\frac{3}{4}$ inches; socket size $\frac{7}{8}$ inch. Each.....$0.85

This wrench is used on: Commutator case support (On cars with self starter), cylinder cover (On cars with self starter), cylinder head.

No. 6020—Long Shank (11") Brace Speed Wrench—Length over all 19$\frac{3}{4}$ inches; socket size $\frac{15}{16}$ inch. Each..... .85

This wrench is used on: Ford Truck, Rear axle housing split.

No. 6022—Long Shank (11") Brace Speed Wrench—Length over all 19$\frac{1}{4}$ inches; socket size $\frac{11}{16}$ inch. Each $0.85

This wrench will fit the following: Crank case lower cover, differential drive gear, muffler, rear axle housing, steering tube flange.

No. 6064—Short Speed Wrench—Length over all 13$\frac{3}{4}$ inches; socket size $\frac{15}{16}$ inch hex Each $0.77

This wrench is used on: Front fender iron (side), radiator support.

No. 6218—Long Shank (20") Brace Speed Wrench—Length over all 23 inches; socket size $\frac{7}{8}$ inch. Each $1.10

Some garage men prefer this brace grinder in place of short grinder VG3. Fork end flexible and will reach all valves including one under the dashboard.

No. VG2—Long Shank Brace Grinder Wrench—Each $0.88

"TEE FLEX" OR UNIVERSAL JOINT WRENCHES

Universal joints and sockets have been used in combination with wrenches and are now complete in one solid tool. Will reach nuts otherwise inaccessible.

This wrench is used on: Carburetor flange (On cars without self starter), commutator case support, cylinder valve cover, inlet and exhaust clamp, universal ball cap.

No. 1013—Length over all 13$\frac{1}{4}$ inches; socket size $\frac{7}{8}$ inch. Each.....$2.50

This wrench is especially adapted for use on the fourth connecting rod. Is also used on: Connecting rod, cylinder head, water cylinder inlet connection.

No. 1020—Length over all 13$\frac{1}{4}$ inches; socket size $\frac{15}{16}$ inch. Each..... 2.50

W-W WRENCHES

Walden-Worcester.

FOR USE ON FORD CARS AND FORDSON TRACTORS

VALVE GRINDER WRENCHES

This wrench is the original wire handle valve grinder redesigned with ⅝ inch bar handle which swivels on cone bearing. The fork end fits the head perfectly.

No. VG3—Short Valve Grinder Wrench—All steel—Each $0.55

NUT AND BOLT SPEED WRENCHES

A one man tool. The extension socket holds either the nut or bolt head while the operator spins it off. Extension arm is adjustable for different bolt lengths.

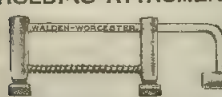
Any Ford mechanic who sees this bolt and nut speed wrench, will immediately recognize its usefulness in splitting the rear axle housing on the Ford car. With this wrench one man can do the work of two. Used on: Rear axle housing bolt and nut.

No. 6316—Bolt and Nut Speed Wrench—Length over all, 20⅝ inches; socket sizes, ⅛ inch hex and ¼ inch hex. Each..$3.00

This wrench will fit the following: Ball socket, bolt and nut; crank case arm, bolt and nut (side); muffler support, bolt and nut; steering post bracket, bolt and nut; steering yoke clamp, bolt and nut; transmission cover bolt and nut.

No. 6318—Bolt and Nut Speed Wrench—Length over all, 20⅝ inches; socket sizes, ⅜ inch hex. and ⅞ inch hex. Each..$3.00

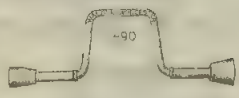
NUT AND BOLT HOLDING ATTACMENT



This attachment may be used in connection with either the brace speed wrenches (6050 series) or the long shank Tee handle wrenches (2700 series).

No. 6416—½-inch. Each..... $2.00
No. 6418—⅝-inch. Each..... 2.00

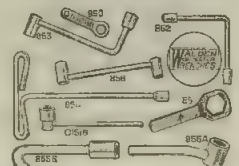
WHEEL ASSEMBLY WRENCH



For Ford Cars.

This wrench covers a demand for a single, substantial, serviceable wrench for assembling wheels on a Ford car. A brace (speed wrench) with two sockets, each socket having two broached openings to take four parts, front hub cone and axle nut, hub cap and rear axle nut.
No. 1490—Extreme length, 18½ inches, ⅞ inch diameter, 6 inch leverage, 12 inch sweep, swivel handles on each end adjoining socket. Net weight 3.73 lbs. Each.. $3.00

NO. 85 SET FOR USE ON FORDSON TRACTORS



DIRECTORY OF WRENCHES

Clutch housing nut	852
Clutch lever bracket bolt	856
Clutch shaft nut	851
Connecting rod cap bolt nut	856
Crank case bolt	856
Crank case nut	856
Crank shaft bearing cap bolt nut	
Main bearing nut	858
Cylinder front cover bolt	856
Cylinder front cover cap screw	856
Cylinder head cap screw	856
Dash cap screw	853
Differential housing bolt	856
Differential housing	855-B
Exhaust tube bracket bolt	852
Fan adjusting nut and screw	850
Foot bracket cap screw	854
Front wheel spindle nut	856-A
Fuel tank strap nut	856
Gear shifter plate cap screw	854
Radiator connection bolt	856
Radiator connection bolt nut	856
Radiator cover bolt	856
Radiator cover bolt nut	856
Radiator tank bolt	852
Radiator tank bolt nut	852
Radiator top tank cap screw	854
Radius rod bolt nut	01616
Rear axle housing cap screw	853
Rear axle split	856-855-B
Rear wheel hub cap screw	855-A-B
Steering arm ball nut	01616
Steering arm nut	855-A
Steering shaft nut	01616
Steering wheel nut	850-01616
Transmission housing bolt	856
Transmission housing bolt nut	856
Transmission housing cap screw	856
Transmission draw bar cap screw	853
Transmission housing plate cap screw	856
Transmission oil plug	856-A
No. 85 Set—Weight, per set, 13½ pounds. Per set	$8.80

Socket wrenches are the most efficient wrenches made. These wrenches have been specially designed and adapted to the Fordson Tractor. Whether in the hands of the farmer or the expert repairman will save time when repairs or adjustments are required and will keep the tractor more constantly on the job.

No. 850—Double End Box Type Wrench—length over all 5 inches; socket size ⅜ inch. One end of this wrench fits the lock nut of the fan adjustment, the other end fits the adjusting screw.

No. 851—Single End Box Type Wrench—Length over all 8½ inches; socket size 1⅞ inches. Fordson Tractor owners and mechanics will recognize this wrench as one particularly designed to adjust or remove the clutch shaft nuts.

No. 852—L Type Wrench, 5⅛x6¼ inches; socket sizes ⅞ and ½ inch. Particularly designed for use on: Motor Unit, Clutch housing, exhaust tube bracket and radiator tank.

No. 853—Double End Offset Wrench—Length over all 9x4¾ inches; socket sizes ⅞ inch sq. and ½ inch hex. Used on: Rear Axle—Rear axle housing; Motor Unit—Crank shaft bearing or main bearing and transmission draw bar; Miscellaneous—Dash support.

No. 854—Tee Handle Wrench—Shank 15 inches, handle 8 inches; socket size ⅝ inch. A heavy type Tee handle wrench manufactured especially for use on: Motor Unit—Gear shifter plate, radiator top tank; Miscellaneous—Foot brake. Also very useful where a heavy type Tee Handle wrench is required with a ⅝ inch hex. opening.

No. 855A—Single End Offset Wrench—Length over all 9¾ inches, socket size 1⅛ inch. Used on: Front Axle—Front wheel spindle and steering arm; Rear Axle—Rear wheel hub cap; Miscellaneous—Seat spring. Used in combination with No. 855B for additional leverage. This gives an over all length of 18 inches.

No. 855B—Hook End Extension—Length over all 9¾ inches. This is an extension for 855A to be used for additional leverage. The hook is used in prying apart the rear axle housing after the cap screws have been removed.

No. 856—Double End Offset Wrench—Length over all 10 inches; socket sizes ⅝ and ⅞ inch. Used on Rear Axle—Differential housing; Motor Unit—Connecting rod, clutch lever bracket, crank case, cylinder front cover, cylinder head, radiator connection, radiator cover, transmission housing and transmission housing plate; Miscellaneous—Foot brake.

No. 01616—Single End Offset Wrench—Length over all 10 inches; socket size ⅜ inch. Used on: Rear Axle—Radius rod; Steering Assembly—Steering arm, steering shaft nut and steering wheel. This is one of the wrenches in the No. 85 Set for the Fordson Tractor.

BLACKHAWK WRENCHES

New Progress in Wrench Making.

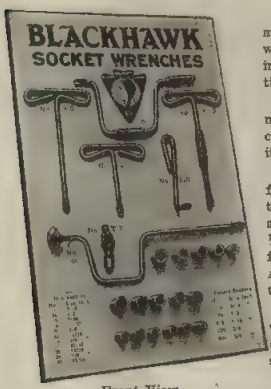
Blackhawk wrenches mark a distinctive step forward in wrench making. They are different. They have been designed and made along new lines that have established new standards. Their great strength, simplicity, finish, versatility and general superiority are the subject of comment wherever wrenches are used or sold.

There are Blackhawk individual wrenches and combination wrench sets for garages, automobilists, machinists, engineers, tractors, aeroplanes and service station use. When invention introduces a new, practical type of machine, a Blackhawk wrench is soon ready to serve that particular assembling repair need.

Blackhawk wrenches are treated by the Parker Rust-Prooof Process, which imparts a fine, black, lasting finish to the tool. This treatment is an effectual rust preventative used in gun making. The unusual strength of Blackhawk wrenches is obtained by machine-turning the sockets from the solid steel bar. They are broached out, ⅛-inch oversize to insure perfect fit.

INTERCHANGEABLE Q. D. HANDLES AND SOCKETS

This Special Assortment and Display Board are Business Getters.



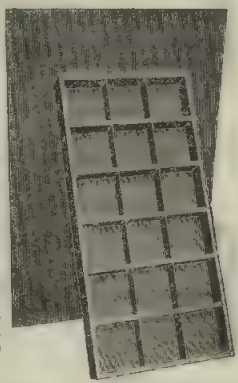
Front View.

This special assortment was made up to meet the demand for a large range of wrenches. The handles and sockets are instantly interchangeable and 192 combinations can be made up from the set.

The display board has handy compartments at the back holding sockets, each compartment plainly marked with the sizes it holds.

All Quick Detachable handles are made from the finest material obtainable for the purpose and are interchangeable with all makes of sockets having the standard ½-inch opening. Sockets are machined from steel, heat treated and are rust-proof. A definite guarantee accompanies each tool.

This board and assortment have met with instant aproval among jobbers and dealers. You will find them very fine sales stimulators.



Back View.

Q D Handles

		Each
6 each No. 8810,	12-inch Tee Handle with Center Handle	$1.20
6 each No. 310,	12-inch Tee without Center Handle	.80
6 each No. 210,	6-inch Tee Handles	.75
6 each No. 110,	Offset Handle	1.35
6 each No. 500,	Rim Brace	1.35
6 each No. 610,	Speeder Handle	1.35

88 Q. D. Handles

Hexagon Sockets

		Each
5 each No. 14,	7/16-inch	$0.40
5 each No. 16,	½-inch	.40
10 each No. 18,	9/16-inch	.40
5 each No. 19,	19/32-inch	.40
10 each No. 20,	5/8-inch	.40
5 each No. 22,	11/16-inch	.40
5 each No. 24,	¾-inch	.45
5 each No. 25,	13/16-inch	.45
5 each No. 26,	7/8-inch	.50
5 each No. 28,	15/16-inch	.50
5 each No. 30	1-inch	.50

55 Hexagon Sockets

Square Sockets

		Each
5 each No. 014,	7/16-inch	$0.40
5 each No. 016,	½-inch	.40
5 each No. 018,	9/16-inch	.45
5 each No. 020,	5/8-inch	.50
5 each No. 024	¾-inch	

25 Square Sockets

3 T2 Universal Joints $1.65

No. BH200—Board complete with 90 sockets—36 handles and 3 universal joints as listed above; weight, each, 79 lbs. Each $85.00

No. BH150—Board with 36 handles and 3 universal joints; weight, each, 60 lbs. Each 47.50

One in a box.

BLACKHAWK WRENCHES

INTERCHANGEABLE Q. D. HANDLES AND SOCKETS

All Blackhawk Quick Detachable handles can be used with all of our sockets, combination sets or parts in No. 50 Stock Cabinet. They are also interchangeable with all makes of sockets having the ½-inch standard opening. This gives Blackhawk Quick Detachable wrenches the greatest possible range of utility and makes them easily adapted to the needs of everyone using wrenches.

Blackhawk Q. D. Handles are made of ½-inch stock—fully guaranteed. They are made to stand up under rough treatment and give the kind of service you expect from fine tools.

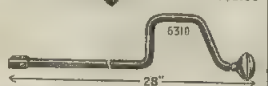
No. 3310 — 12-inch Q. D. Tee Handle with speed grip. Each $1.20

No. 310—12-inch Q. D. Tee Handle. Each $0.88

No. 210—6-inch Q. D. Tee Handle. Each $0.80

No. 110 — 7-inch Q. D. Offset Handle Each. $0.75

No. 610 — 20-inch Q. D. Speeder Handle. Each...$1.35



No. 6310—28-in. Q. D. Speeder Handle. Each $1.85

No. 500 — Q. D. Brace Handle. Each $1.35

Standard package contains 10 handles.

HEXAGON AND SQUARE STEEL SOCKETS

Meet Every Requirement for Strength and Service.

No effort has been spared to make sure that Blackhawk Steel Sockets match the very highest standard of quality. Each socket is machined from the solid bar, broached $\frac{1}{64}$ inch oversize to insure a perfect fit, heat treated to prevent rounding out and finished with a rust proof coating. Every socket is guaranteed to give satisfactory service.

SIZES BELOW ARE BOLT OR SCREW SIZES

TABLE OF HEXAGON SOCKETS

No.	Socket Sizes	U. S. S. Nuts Size Bolt	Hex. Head Cap Screws U. S. Std.	S. A. E. Std. Hex. Head Cap Screws	A. L. A. M.	Mfrs. Std. Bolt Head	Mfg. Head Set Screws	Coupling Screws
14	7-16		1-4	1-4		7-16		
16	1-2	1-4	5-16	5-16	5-16	1-2		
18	9-16		3-8	3-8	3-8	9-16	3-8	9-16
19	19-32	5-16						
20	5-8		7-16	7-16		5-8		3-8
22	11-16	3-8			7-16			
24	3-4		1-2	1-2	1-2	1-2	3-4	1-2
25	25-32	7-16						
26	13-16		9-16					
28	7-8	1-2	5-8	9-16	9-16	7-8		
30	15-16			5-8	5-8	5-8	5-8	5-8
31	31-32	9-16						
32	1		3-4	11-16	1-16	1		
34	1 1-16	5-8		3-4	3-4			
36	1 1-8	7-8				1 1-8	3-4	
40	1 1-4	3-4	1			1 1-4		

TABLE OF SQUARE SOCKETS

No.	Size Opening	Sq. Head Set Screw	Sq. Head U. S. S. Cap Screws	Sq. Head Mfrs. Std. Bolt Size
014	14-32	7-16	5-16	
016	1-2	1-2	3-8	1-4
018	9-16	9-16	7-16	
019	19-32			5-16
020	5-8	5-8	1-2	
022	11-16		9-16	3-8
024	3-4	3-4	5-8	
025	25-32			7-16
026	7-8	7-8	3-4	1-2
034	1 1-16			5-8
041	1 1-32	1 1-4	1	3-4

GUARANTEED BROACHED STEEL SOCKETS

HEXAGON

No.	Socket Size, in.	Price	No.	Socket Size, in.	Price
14	7/16	$0 40	26	1 1/16	$0 50
16	1/2	.40	28	1 1/8	.50
18	9/16	.40	30	1 3/16	.50
19	19/32	.40	31	1 7/32	.50
20	5/8	.40	32	1 1/4	.50
22	11/16	.40	34	1 5/16	.65
24	3/4	.45	36	1 1/16	.65
25	25/32	.45	40	1 1/8	.65

SQUARE

No.	Socket Size, in.	Price	No.	Socket Size, in.	Price
014	7/16	$0 40	024	3/4	$0 55
016	1/2	.40	025	25/32	.55
018	9/16	.40	026	7/8	.65
019	19/32	.45	034	1 1/16	.75
020	5/8	.45	041	1 1/32	.75
022	11/16	.50			

One assortment in a box.

BLACKHAWK WRENCHES

4 IN 1 UNIVERSAL RIM WRENCHES

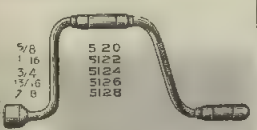
Four wrenches all in one—built right up to Blackhawk standards and carrying the famous Blackhawk guarantee. "A real tool," says every mechanic who has seen it.

This wrench is a heavy duty service tool in every sense of the words. The handle is made from ⅝-inch steel and is tough enough to stand more strain than any arm can give it. The quadruple-socket head is drop forged in one piece. This wrench will stand up under the banging around and general abuse that a tool of this kind gets. It lies perfectly flat on the ground or in a kit. No springs or ratchet arrangements are used. There is nothing to get out of order.

This heavy duty wrench fits ⅝, ½, ¾ and ⅞-inch.

No. 5104—Size ⅝, ½, ¾ and ⅞ inch, fits them all; weight, each, — lbs. Each.....$3.95

DEMOUNTABLE RIM BRACE SOCKET WRENCHES



The wrench for use on demountable rims for car owner, or for use in garage or service station. Has solid steel knurled swivel handles which is far more serviceable than wooden handles. Sockets are the best. Parker rust proof finish. See that Blackhawk is stamped on the wrench which insures perfect satisfaction and guarantee.

Sizes for Different Make Rims:

No. 5120—Size ⅝ inch fits Kelsey, Jaxon rims. Each.....$1.25

No. 5122—Size ½ inch fits Fisk Dem., Goodrich, Firestone. Each..... 1.25

No. 5124—Size ¾ inch fits Baker, Continental, Detroit, Fisk, Stan. Weld. Goodyear. Each..... 1.25

No. 5126—Size ⅞ inch ,fits Stan-Weld No. 2, Universal. Each..... 1.25

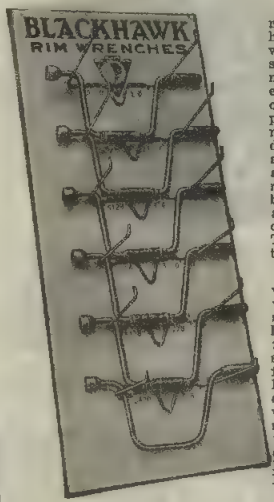
No. 5128—Size 1 inch, fits Fisk tires. Each.... 1.25

When ordering Blackhawk wrenches use our stock numbers.

All Blackhawk wrenches are finished with the Parker rust proof process.

WELDED RIM WRENCHES

This Special Display Board Will Increase Your Rim Wrench Sales.



With this assortment of Blackhawk welded rim wrenches you can supply all the demands for wrenches to fit any make or size rim. When placed in a prominent position this display board acts as a very profitable silent salesman for the jobber, tire dealer, accessory dealer or service station. The turnover on this outfit is rapid

All Blackhawk welded rim wrenches have solid steel swivel handles and are made of ½ inch stock. By looking for the name Blackhawk stamped on every wrench you will make sure of genuine Blackhawk quality and the Blackhawk "Fair Play Guarantee."

This display outfit includes—

6 each No. 5120, ⅝-inch Rim Wrenches to fit Kelsey, Jaxon and Ford rims.....$1.25

6 each No. 5122, ½-inch Rim Wrenches to fit Firestone and Goodrich rims..... 1.25

6 each No. 5124, ¾-inch Rim Wrenches to fit Stanweld, Jaxon, Detroit, Baker and Goodyear rims..... 1.25

6 each No. 5126, 1⅛-inch Rim Wrenches to fit Stanwald Nos. 40 and 60 and United rims..... 1.25

6 each No. 5128, ⅞-inch Rim Wrenches to fit Giant Pneumatic rims..... 1.25

6 each No. 5420, ⅝-inch Rim Wrenches, special to fit Ford Standard demountable rims..... 1.00

36 Tools

No. BH5100—Rim Wrench Display Board—Weight each 67 lbs. Each.....$43.50

2842B BLACKHAWK WRENCHES

COMBINATION WRENCH SETS

Blackhawk Combination Socket Wrench Sets are superior to any other line of similar sets on the market, not only in quality, but for efficiency and finish. Set No. 10 is very complete and will enable the user to reach places difficult of access or in cramped quarters, where the ordinary type of wrench is out of the question. To meet all conditions, there has been included ratchet wrenches, brace wrench, extension bars, universal joint, etc.

All these tools are finished with the Parker rust proof process which insures against rust, making them very popular for motor boat, automobile, motor cycle, aeroplane, garage and service station use.

No. 10 Set contains 9-inch ratchet wrench, 2 extension bars, pipe wrench, brace wrench, Universal joint, 2 spark plug sockets, 5 open end thin wrenches, pliers, combination tee and offset handle, double end screw driver, valve grinding attachment, cotter pin puller, 16 hex. sockets, sizes, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $\frac{15}{16}$, 1", $1\frac{1}{16}$, $1\frac{1}{8}$, $1\frac{1}{4}$, and 11 square machined steel sockets, sizes, $\frac{7}{16}$, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{13}{16}$, $\frac{7}{8}$, $1\frac{1}{16}$, $1\frac{1}{8}$.

No. BH10 Set—Weight, per set, 22¾ lbs. Each..$27.00

Each set wrapped in heavy paper.

COMBINATION SOCKET WRENCH SETS

A complete set with ratchet wrench, sockets, extension bars, etc. Desirable set for garage or shop use. Guaranteed machined steel sockets.

No. 8 Set contains:

16 Machined steel hex sockets, sizes $\frac{7}{16}$ to $1\frac{1}{4}$ inclusive.
3 Machined steel sq. sockets, sizes $\frac{7}{16}$-$\frac{1}{2}$-$\frac{9}{16}$.
1 Ratchet wrench, 9 inch handle.
2 Extension bars, 6 inches and 10 inches long.
1 Universal joint.
5 Open end wrenches.
1 Combination tee and offset handle.
1 Spark plug socket double end

No. BH8 Set—Weight, per set, 13½ lbs. Each .$18.50

Packed in wooden box.

Desirable set for car owner.

No. 6 Set contains:

15 Hex. Machined steel sockets, sizes $\frac{7}{16}$ to $1\frac{1}{4}$ inclusive.
1 9 inch ratchet wrench,
1 Universal joint,
1 Extension bar, 8-in.
1 Combination tee and offset handle.

No. BH6 Set—Weight, per set, 9¾ lbs. Each..$14.50

Packed in wooden box.

Complete set for Ford owner; will cover all standard nuts and bolt heads.

No. 4 Set contains.
7 Hex. Machined sockets, sizes, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{7}{8}$, $\frac{15}{16}$.
1 Sq. machined socket, size $\frac{7}{16}$.
1 9 inch ratchet wrench
1 Universal joint.
1 Extension bar, 8-in.

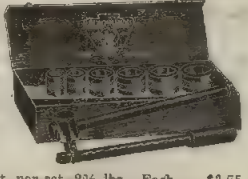
No. BH4 Set—Weight, per set, 5½ lbs. Each. .$9.75

Packed in wooden box.

A small but handy set for automobile, motorcycle, etc.

No. 2 Set contains:

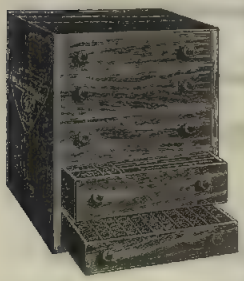
6 Hex. machined sockets, sizes, $\frac{1}{2}$, $\frac{9}{16}$, $\frac{5}{8}$, $\frac{11}{16}$, $\frac{3}{4}$, $\frac{15}{16}$.
1 Combination tee and offset handle.
1 Extension bar, 6-in.



No. BH2 Set—Weight, per set, 2¾ lbs. Each....$3.75

Packed in fibre box.

NO. 50 STOCK CABINETS



Given free with assortment of Combination Wrench Parts. This stock cabinet, made up specially for the hardware and accessories store. Dealers will find ready sale for items contained in this most complete stock set. The cabinet is 21 inches high, 18 inches wide and 11 inches deep; each drawer arranged with compartments for the different size sockets, as well as for other items contained in cabinet.

With this stock cabinet you can supply your customers with wrenches for all kinds of work, whether for garage or service station use, manufacturer or farmer. Every tool guaranteed. All sockets are machine turned steel and $\frac{1}{64}$ inch oversize.

No. 50 Stock Cabinet contains.

Hexagon Sockets:

12 each 2 sizes 14 to 25
6each 8 sizes 26 to40
144—Total No. of Hex. Sockets

Square Sockets:

6 each 5 sizes 014 to 020
3 each 6 sizes 022 to 041
48—Total No. of Square Sockets.

4 each 4-B, 6-B, 8-B Bit Shanks
12 T-4 Offset and Tee Handles
4 each T-6, T-8, T-10 Extension Bars
6 T-2 Universal Joints
6 T-5 Offset Handles
6 T-7 Canvas Rolls
3 each 3829-3751 Spark Plug Wrenches

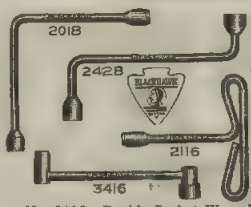
6 911 Ratchet Wrenches

No. BH50 Stock Cabinet—Weight, — lbs. Each..$139.10

SPECIAL SOCKET WRENCH SETS

For Owner's Use, Also Garage and Service Stations.

No. 30 Chevrolet Set.



No. 2116—Tee handle, ½ inch socket. Fits all bolts used on oil pan, rocker arm bracket, axle housing, battery hold down clamps, Bendix drive, oil pump, transmission cover, universal joint housing, transmission bearing retainer generator, water pump cover, steering gear housing.

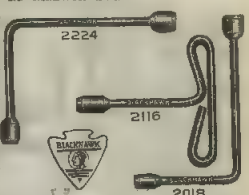
No. 3416—Double Socket Wrench, ½ inch square and $1\frac{7}{16}$ inch hex. Sockets fit clutch leather inserts, body bolt and nut, front spindle nut, rear wheel nuts, rear spring rear and front bolt.

No. 2428—Double Socket Wrench, sizes ⅞ inch and ¾ inch. Used on cylinder head bolts, transmission stud, transmission support bolt, clutch collar, main bearing nuts, rear and front spring bolt.

No. 2018—L Double Socket Wrench, $\frac{7}{16}$ inch and ⅝ inch. Fits all bolts, nuts and screws used on fender bracket, connecting rod, fly wheel cap, motor support, clutch yoke, radiator, differential case, connecting rod, upper end; axle housing, B.-G.; intake and exhaust manifold; transimission stud B.-G.; water outlet, rear motor, starting switch bracket, transmission support bracket, steering gear clamp.

No. BH30—Chevrolet Set—Weight, each, 4½ pounds. Each $4.50

No. 25 Maxwell Set.



No. 2224—L Double Socket Wrench, ¾ inch and $\frac{11}{16}$ inch hex sockets, used on crank shaft bearing bolts, rear axle nuts, cylinder head bolts and body bolts.

No. 2116—Tee Handle, ½ inch socket, used on differential case bolts, outside crank case cap screw, clutch case to transmission, water inlet manifold, transmission main shaft bearing bolts, front fender brackets, clamps for storage battery, steering gear housing bolts and starting switch bracket cap screws.

No. 2018—L Double Socket Wrench, size ⅝ inch and $\frac{7}{16}$ inch. Fits flywheel cap screws, spring shackle bolts, spring clip nuts, running board bolt and nut, radiator nuts, speedometer bracket bolt, lamp bracket bolts, intake and exhaust manifold bolts, connecting rod nuts, gear case cover cap screws, clutch housing to motor bolts, rear main bearing, nuts, gear housing and main bearing to motor bolts, differential case nut, inside; gear shift housing bolts, cable conections on starter switch, connecting rod wrist pin clamp screw.

No. BH25—Maxwell Set—Weight, each, 3½ pounds. Each $4.00

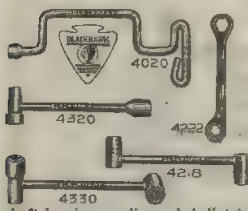
One outfit in a box.

BLACKHAWK WRENCHES

SPECIAL SOCKET WRENCH SETS

For Owner's Use, Also Garage and Service Stations.

No. 45 Ford Owner Set.



Wrenches in this set will take care of practically all bolts and nuts on Ford cars. Every wrench guaranteed and Parker rust proof finish.

No. 4020 — Fits all connecting rods, including 4th connecting rod.

No. 4218—$\frac{7}{16}$ in. and $\frac{3}{4}$ inch socket openings fit crank shaft bearings, radius rod, ball joint nuts, lamp bracket nuts, spindle con. rod, steering gear post, fan adj. bolt, brake shoe support, etc.

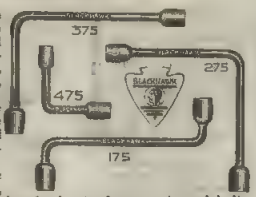
No. 4320—Has $\frac{1}{2}$ inch and $\frac{5}{8}$ inch sockets. Fits rear axle housing, lower crank case cover, cylinder head bolts, cylinder inlet and outlet connections, differential case, drive shaft roller bearing, running board fender, spring tie, controller shaft bracket.

No. 4222—Fits all transmission bands. A great labor saving tool. The $\frac{13}{16}$ inch hex. opening used on Champion X spark plug.

No. 4330—Has $\frac{11}{16}$, $\frac{7}{8}$ and $\frac{15}{16}$ inch socket openings. Fits front spring clips, drive shaft pinion, hub bolts and nuts, radius rod, spindle arm and spindle body bolts, rear hub lock nuts.

No. BH45—Ford Owner Set—Weight, each, 7¾ pounds. Each $4.55

No. 750 Overland Set.



No. 175—Double socket wrench; size opening $\frac{5}{8}$ inch and $\frac{11}{16}$ inch; fits cylinder head bolts, front spring bolts, etc.

No. 475—Double socket wrench; size opening ½ inch and $\frac{7}{16}$ inch; fits differential plate cap screw, gear case cover nut and bolts, exhaust manifold bolts, fender to frame nuts and bolts, transmission case covers, crank case screws, front splash pan bolts, differential cover, emergency hand brake lever, sector gasoline tank nuts, radiator stay rod nuts, side plate cap screws, spring clips

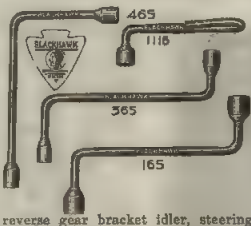
No. 375—Double Socket L Wrench; has $\frac{5}{8}$ inch and $\frac{3}{4}$ inch sockets; fits steering post nuts, rear hub, cap and many places on other Overland models.

No. 275—Double Socket Wrench; $\frac{7}{16}$ inch and $\frac{11}{16}$ inch sockets; fits connecting rod nut, main bearing nuts, and many places on other models of Overland cars.

Above set of wrenches are adapted to many parts of other models of Overland cars.

No. BH750—Overland Model 90 Set—Weight, each, 4½ lbs. Each $3.65

No. 650 Dodge Set.



No. 165—Double socket wrench; size $\frac{7}{16}$ and $\frac{7}{16}$ inch hex.; used on cylinder water inlet, rear axle housing starter band, etc.

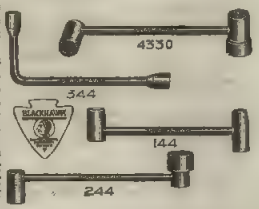
No. 1118—Offset ½ in. socket clutch housing cover, clutch pedal clamp, breather bolts, counter shaft, oil pan strainer and pipe connections, reverse gear bracket idler, steering gear, transmission case cover and plate, timer gear cover.

No. 365—Double socket offset, $\frac{7}{8}$ and ¾ inch hex.; sockets for crank shaft, main bearing, connecting rods, shifting shaft plunger and support for universal joint housing.

No. 465—L Double Socket Wrenches; ½ and $\frac{11}{16}$ inch hex.; sockets used on crank case, cylinder head bolts, oil pump cover.

No. BH650—Dodge Set—Weight, each, 3¾ pounds. Each $3.40

No. 440 Buick Set.



No. 4330—Triple socket wrench; size socket wrench; sizes $\frac{11}{16}$, $\frac{7}{8}$ and $\frac{15}{16}$ inch hex.; sockets used on hub bolts, motor arm bolts, nuts on windshield, front spring shackles bolt and nut and carburetor connection screws, engine arm bolts, steering arm, rear housing nuts and steering arm nuts.

No. 244—Double Socket Wrench; ¾ and 1 inch; used on connecting rod nuts for main bearing, steering gear screws, fan screws, crank case nuts, steering arm valve stem nuts.

No. 344—L Double Socket; sizes ½ and $\frac{5}{8}$ inch hex.; sockets used on crank case lower cover screws, radiator bracket screws, fender bolts, rear housing cap screws, etc.

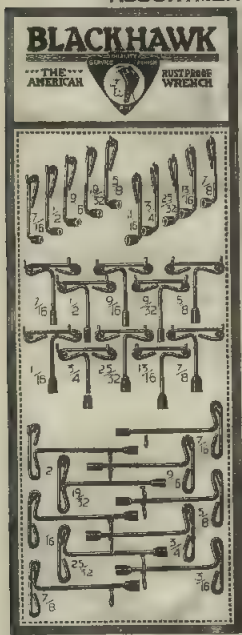
No. 144—Offset with three sockets, $\frac{5}{8}$, $\frac{7}{16}$ and ½ inch hex.; used on differential housing screws, rear housing screws, transmission end plate nuts, brake lever nuts and cam shaft support to rods, torsion rods, muffler screws, generator to crank case bolts, break lever clamp screws, cam shaft collar, etc.

No. BH440—Buick Set—Weight, each, 5½ pounds Each $4.00

All above, one outfit in a box

BLACKHAWK WRENCHES

NO. 360 TEE AND OFFSET WRENCH ASSORTMENTS



General Service Wrenches. Guaranteed Tools.

This handsome display board given free, with the described assortment of wrenches. It is a great salesman. No hardware or accessories store is complete without this stock set.

No. 360 Set Contains:

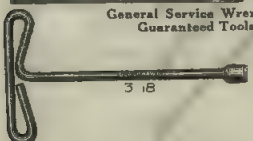
60—Tee Handle Wrenches, 12-inch shank.

60—Tee Handle Wrenches, 6-inch shank.

60 Offset Wrenches, 7 inch Handle.

Total—
180 wrenches.

No. BH360 — Display Set — Weight, each, 229 pounds. Each $108.00



Long Tee.

Stock No.	Size, In.	Each	Stock No.	Size, In.	Each
3114	7/16	$0.72	3122	1/2	$0.72
3116	1/2	.72	3124	9/16	.72
3118	9/16	.72	3125	19/32	.72
3119	5/8	.72	3126	11/16	.72
3120	3/4	.72	3128	7/8	.72

All above, 12-inch shank.

Short Tee.

Stock No.	Size, In.	Each	Stock No.	Size, In.	Each
2114	7/16	$0.66	2122	1/2	$0.66
2116	1/2	.66	2124	9/16	.66
2118	9/16	.66	2125	19/32	.66
2119	5/8	.66	2126	11/16	.66
2120	3/4	.66	2128	7/8	.66

All above, 6-inch shank.

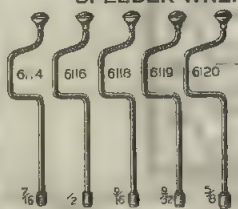
Offset.

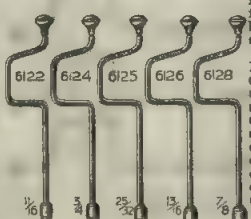
Stock No.	Size, In.	Each	Stock No.	Size, In.	Each
1114	7/16	$0.60	1122	1/2	$0.60
1116	1/2	.60	1124	9/16	.60
1118	9/16	.60	1125	19/32	.60
1119	5/8	.60	1126	11/16	.60
1120	3/4	.60	1128	7/8	.60

All above, 7-inch handle.

Fit Hex. Head Size	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16
Fit Cap Screw Size	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8
Fit A. L. A. M. Size	5/16	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8
Fit U. S. S. Nut Size	3/8	7/16	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16

SPEEDER WRENCHES





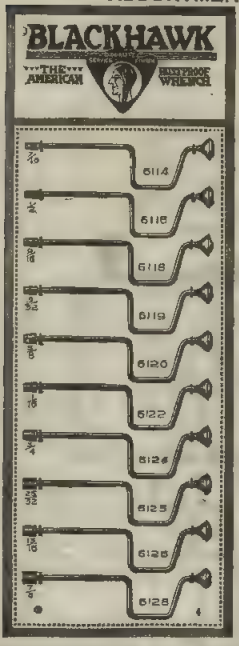
Speed wrenches have become very popular, owing to the speed obtained in taking down and assembling motor cars, trucks, tractors, etc., and are found in practically every garage. Blackhawk speeders are made heavy, with hardened sockets, steel knobs, handles and Parkerized rust proof finish. None better. Look for the name Blackhawk when ordering socket wrenches.

Nos.	Each
6114	$1.00
6116	1.00
6118	1.00
6119	1.00
6120	1.00
6122	1.00
6124	1.00
6125	1.00
6126	1.00
6128	1.00

All above, one outfit in a box.

BLACKHAWK WRENCHES

NO. 600 SPEEDER WRENCH ASSORTMENTS



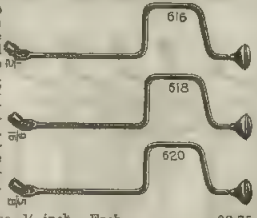
This display board given free with assortment of Blackhawk Speeders. Dealers will find this a great help in making increased sales.

No. 600 Set contains 10 each size Speeders as shown on display board.

No. BH600 Set—Wt., each, 209 lbs. Each $99 00

SPEEDERS WITH UNIVERSAL JOINT

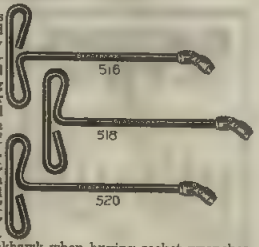
These speeders may be applied in many places, where the ordinary solid speeder cannot be used to advantage. They are made of the very best material and will give unlimited service. Every wrench guaranteed. Will be found most desirable for garage use. See directory.



No. 616—Socket size, ½ inch. Each..... $2 75
No. 618—Socket size, ⅝ inch. Each..... 2 75
No. 620—Socket size, ¾ inch. Each..... 2.75

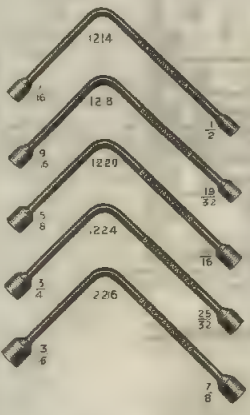
TEE SOCKET WRENCHES WITH UNIVERSAL JOINT

These wrenches are designed and made particularly for garage and service station use. Will save time in doing work and do it far better, as they will fit places where a particular style of wrench is needed. Made from the best material that can be obtained, and highest grade of workmanship. Every wrench guaranteed. Look for name Blackhawk when buying socket wrenches.



No. 516—Socket size, ⅜ inch. Each.....$2.25
No. 518—Socket size, ⅝ inch. Each..... 2.25
No. 520—Socket size, ⅝ inch. Each..... 2.25

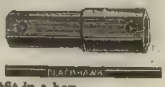
L SOCKET WRENCHES



Made strong and adaptable to many places where a Tee or Speed wrench could not be used. Each wrench fitted with two sockets, making in reality 10 wrenches. A desirable set for all garages.

No. BH1200 Set—Consists of five wrenches; weight, per set, 5¾ pounds. Per set $4.75

SPARK PLUG WRENCHES



No. 3329—13/16x1 3/16 inch. Each $0.55

No. 3731—13/16x1 3/16 inch. Each ..... .55

All above, one outfit in a box.

BLACKHAWK WRENCHES

BIT BRACE SHANKS

No. 4-B—Bit shank 4 in. Each..$0.65
No. 6-B—Bit shank 6 in. Each.. .75
No. 8-B—Bit shank 8 in. Each . .80

THIN OPEN END STEEL WRENCHES

These wrenches are stamped, made from special steel and properly tempered. Will give satisfactory service.

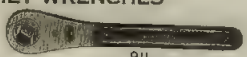
No. BH100 Set—Wt., each, 1½ lbs. Each $1.50

UNIVERSAL JOINTS

Universal Joint—T-2 extra quality dropped forged. Each $1.65

RATCHET WRENCHES

No. 911 — Ratchet wrench, 9 inch handle. Each ...$2.75



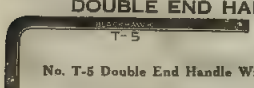
TEE AND OFFSET HANDLES

Tee and Offset Handle—Used with combination parts. Each $0.70

EXTENSION BARS

No. T6—Extension bar, length 6 inches. Each .. .$0 75
No. T8—Extension bar, length 8 inches. Each ... .85
No. T10 — Extension bar, length 10 inches. Each, .90

DOUBLE END HANDLES

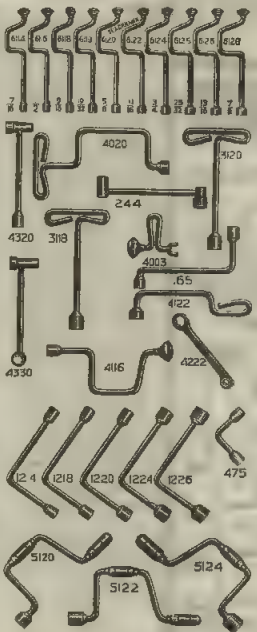


No. T-5 Double End Handle Wrench—Each..$0.65

CANVAS TOOL ROLLS

No. T-7 Canvas Tool Roll. Each $0.80

NO. 43 WRENCH SETS



Blackhawk set No. 43 is a complete and necessary set of socket wrenches, for use in a garage or service station.

There are no two size sockets on the same style handle. Wrenches in this set will fit many places on many different makes of cars. See our directory for special use on different style wrenches in this set.

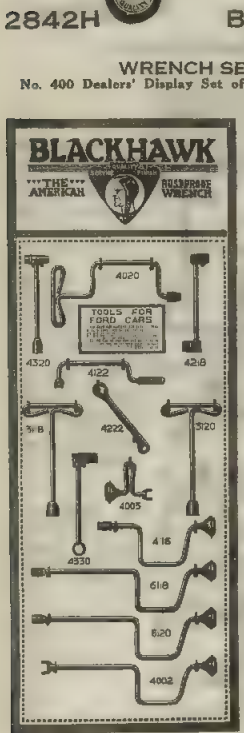
No. BH43 Set—Contains 80 tools packed in wooden box; weight, each, 45 pounds. Each $29.75

One outfit in a box.

BLACKHAWK WRENCHES
FOR USE ON FORD CARS

WRENCH SETS

No. 400 Dealers' Display Set of Special Wrenches



The tools on No. 400 display board consist of six of each style and are for use on Ford cars by the owner or repairman.

Every tool guaranteed. Repairmen want tools that will speed up their work. Blackhawk Tools do this, for they are made to fit, and will give efficient service and wear.

This display board is most attractive and is an asset to any store. The face is made of sheet steel, handsomely lithographed, which makes it a permanent fixture. Given free with assortment of wrenches as listed under illustration.

No. 400 Set contains.
- 6—4020 Connecting Rod Wrenches
- 6—4320 Handy Socket Wrenches
- 6—4218 Triple Socket Wrenches.
- 6—4222 Transmission Band Wrenches.
- 6—4122 Fly Wheel Cap Screw Wrenches.
- 6—3118 Long Tee Handle Wrenches.
- 6—8120 Long Tee Handle Wrenches.
- 6—4330 Heavy Triple Socket Wrenches
- 6—4116 Short Spreaders.
- 6—4003 Short Valve Grinders
- 6—4002 Long Valve Grinders.
- 6—6118 Speed Wrenches.
- 6—6120 Speed Wrenches.

No. BH400 Set—Weight, per set, about 160 pounds. Each $81.10

Proper Wrenches For Use on Ford Cars.

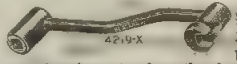
Axle housing bolt and nut	4116-4320-6216-516-616
Brake and rev. sup. nut and bolt	3120-6120-520-420
Brake shoe sup. nut	4218
Brake shoe sup. bolt	520-3120-6120-420
Brake band	4222
Clutch lever and release fork screws and nuts	518-6118-618-3118
Cylinder cover cap screws	6118-618-518-3118
Cylinder head cap screws	6120-620-420-520-4320
Cylinder head inlet con. screws	4320
Cylinder head outlet con. screws	4320
Cylinder valve cover nut and stud	518-3118
Cylinder cover bolt and nut	618-6118-518-3118
Cam gear lock nut	438
Crank case lower cover	4116-4320-516-3116
Crank shaft bearing nuts; center, front and rear	4218
Crank case arm bolt and nut	3118-518-1218
Connecting rod clamp screws	4218
Connecting rods including 4th	4020-4120-520-420
Differential case stud and nuts	4320
Differential drive gear screws	516-4116-4320
Drive shaft pinion nut	430-4330
Drive shaft roller bearing nuts	4320
Fan bracket bolt	4218
Fan adj. screw and nut	618-3118-6118-618
Fly wheel cap screw nuts	4122
Fender iron bolt and nuts	4116-616-516-4320
Front spring clip nut	4330
Front spring tie bolt and nut	4320
Hub bolt and nut	4330
Lamp bracket nuts	4218
Inlet and exhaust clamp stud and nuts	6118-618-518-3118
Magnet bolt	618-6118-518-3118
Main bearing nut	4218
Muffler bracket bolt and nuts	6118-618-518-3118
Muffler rod nuts	4116-616-4320
Radius rod ball joint	618-420-3118
Radiator stud nuts	1281-3118-618-518
Radius rod bolt and nut	4320
Rear spring clip nut	4330
Reverse band	4222
Running board bolt and nuts	4320
Slow speed con lock nut	4222
Spindle arm nut	4330
Spindle bolt and spindle bolt nut	4218
Spindle con. rod bolt	4218
Steering arm nut	1224-3126
Steering gear post nut	6124-4218 3124
Steering post bracket	618-518-4218-6118
Transmission band adj screws	4222
Transmission band adj screw nut	6118-618-3118
Timer case support bolt	4218-3118-518
Transmission cover bolt and nut	618-518-6118-3118
Universal ball cap screws	518-3118

SPECIAL WRENCHES FOR FORDS

These models were designed for special jobs on the Ford car. Various places that are inaccessible with ordinary wrenches are easily reached with these special Blackhawks.

This wrench has proved itself to be the most efficient wrench ever designed for this job. To use this wrench properly, pull the fourth piston to the top of the cylinder. The brace comes below the radius rods. The universal joint makes operation easy. No danger of slippage or injury to the hands.

No. 6420—Connecting Rod Wrench—Socket size ⅝ inch, extra heavy; handle made of ½-inch stock. Each..$2.75



This wrench fits all main bearing bolt heads and will reach the two front main bearing bolts without removing the motor from the chassis.

No. 4219-X—Main Bearing Wrench—Socket size ⅞-inch square—special design socket at other end for connecting rod clamp screw. Each... ..$1.40

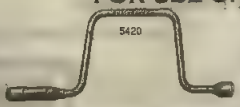
Special design of socket gives advantages of both socket and open end type wrenches. The socket has plenty of clearance, yet is very strong. Cannot slip off work.

No. 4422—Heavy Duty Fly Wheel Cap Screw Wrench—Socket size 1¼-inch; handle is made of ⅝-inch stock. Each $1.25

Open stock

BLACKHAWK WRENCHES
FOR USE ON FORD CARS

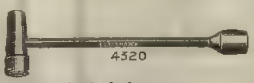
Special for Ford cars.



No. 5420 — Rim Wrench—Socket size ⅝-inch. Handle is made of ½-in. stock. Each $1.00

This is a new design which fits all connecting rods. Especially made to use on fourth connection. No danger of injuring your hand when using this wrench.

No. 4020—Improved Connecting Rod Wrench—Each $1.00



This wrench is used on cylinder head bolts, rear axle housing nuts, drive shaft housing stud nuts, water intake and outlet screws, crank shaft lower cover, controller shaft, bracket nuts and many other places, too numerous to mention. The single socket allows one to spin the nut off or on when loose, saving time. See directory for additional uses.

No. 4320—Handy Socket Wrench—Each $0.85

Especially designed for use on engine base bolts. With this wrench greatest speed can be obtained in taking down and assembling the motor. Every garage should be equipped with one or more of this tool.

No. 6218—Speeder Wrench—Each $2.75

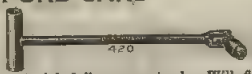
No. 6216—Speeder Wrench—Same as No. 6218, but with ⅜ inch socket for use to speed up shop operations intaking down and putting Ford Rear Axle system together. Each 2.75

This wrench can be used on all rods, including the 4th.

No. 4120—Connecting Rod Wrench—Each $0.65

This wrench is used on drive shaft pinion nut especially made for garage and service station use.

No. 430—Pinion Gear Nut Wrench—1⅛ inch extra heavy socket. Each $1.10



This wrench is particularly adapted for garage and service station use, Made of very best material fully guaranteed. Will fit fourth connecting rod, cylinder head bolts, engine base bolts, radius rod ball joint, etc. Also useful for work on other makes of cars. See directory.

No. 420—Triple Socket Wrench—With Universal joint; socket sizes ⅝ inch, ¾ inch, ⅞ inch. Each.....$2.50

Performs its duty with ease, while the old type of wrenches are almost useless. Desirable for garage and service station use.

No. 438—Cam Gear Lock Nut Wrench—Each.....$1.40

This wrench is particularly designed to grind valve under dash when motor is not removed from the car.

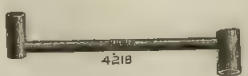
No. 4003—Short Valve Grinder Wrench—Each $0.60

Used in all Ford Valves when motor is removed from the car. Can also be used in many other makes of cars.

No. 4002—Long Valve Grinder—Each.....$1.00

Specially made for use on crank case lower cover, when no pit is used. Also fender nuts and differential drive gear screws.

No. 4116—Short Speeder Wrench—Each.....$0.95



This wrench fits crank shaft (main) bearing nuts, steering gear post and bracket, brake shoe support, spindle bolt and nut, fan bracket, radius rods ball joint nuts, timer support arms, lamp bracket nut. See directory for further uses.

No. 4218—Hammer Head Double Socket Wrench—Each $0.95

All above, open stock.

BLACKHAWK WRENCHES

FOR USE ON FORD CARS

Especially designed for transmission bands (brake and reverse), using ratchet end. Very best wrench for use on Champion X Spark Plug. No slipping off and breaking the porcelain of plug.

No. 4222X—Transmission Band Wrench—$\frac{11}{16}$ inch opening, $\frac{13}{16}$ inch hex. opening. Each.....$0.90

Fits spindle arm body bolt nut, rear and front spring clip nut, rear hub lock nut, hub bolt and nut, drive shaft pinion nut, radius rod bolt and nut.

No. 4330—Extra Heavy Triple Socket Wrench—Socket sizes $\frac{7}{16}$, $\frac{7}{8}$ and $1\frac{1}{8}$ inch. Each.....$1.45

Especially designed to properly perform its duty. Saves labor and money.

No. 4122—Fly Wheel Cap Screw Wrench—Socket size $\frac{13}{16}$ inch. Each.....$0.80

Open stock.

NO. 700 DISPLAY BOARDS

No. 700 Display Board consists of:

— 516 Universal Tee Handle Wrenches.

6— 518 Universal Tee Handle Wrenches.

6— 520 Universal Tee Handle Wrenches.

6— 420 Handy Universal Joint Wrenches.

6— 430 Pinion Gear Nut Wrenches.

6—6216 Improved Speed Wrenches.

6—6218 Improved Speed Wrenches.

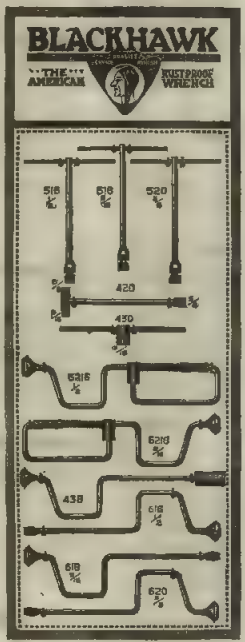
6— 438 Cam Gear Lock Nut Wrenches.

6— 616 Universal Joint Speed Wrenches.

6— 618 Universal Joint Speed Wrenches.

6— 620 Universal Joint Speed Wrenches.

No. BH700 Display Board — Weight, each, 148 pounds. Each $155.10



One outfit in a box.

Genuine Fibre Hand Woven Furniture at Factory Prices

THE PLAIN FINISHES are: Light or Dark Sarsnat Brown. The FANCY FINISHES are: Old Ivory, Frosted Brown, Blue and Gold, Green and Gold, French Gray, Silvertone, Black and Elootan Tan with a blue rub. The colors of the Velour are Solid Blue, Blue Ground with Dark Gold Pattern or Nigger Brown embossed Velour. (Samples sent upon request). BE SURE TO SPECIFY FINISH WHEN ORDERING

Shown above is an excellent and popular suite which is expertly constructed of genuine fibre and woven by hand. Upholstered in a fine quality Cretonne, however, obtainable in Tapestry or Velour at a slight additional cost. Expertly constructed and beautifully finished in any of the finishes listed above.

A — **No. 3WJR1212C** Fibre Couch Spring filled cushion on coiled spring seat. Seat 10x21 inches. Height of back 25 inches.
Plain Finish each **$35.70** Fancy Finish each **$39.50**
(For Tapestry or Velour Covering add $6.45 in addition)

B" — **No. 3WJR1819** Fibre Fern Stand. Height 38 inches, width 15 inches, length 28 inches. Galvanized Metal Liner.
Plain Finish each **$14.60** Fancy Finish each **$15.50**

C" — **No. 3WJR1712C** Fibre Davenport. 60 inches. Spring filled cushion on coiled spring seat. Seat 60x23 inches. Height of back 25 inches.
Plain Finish each **$82.65** Fancy Finish each **$89.20**
(For Tapestry or Velour Covering add $15.00 in addition)

D — **No. 3WJR955** Fibre Table. Fancy wood top. Top 24 inches square. Top connected on iron frame with shelf or reed work.
Plain Finish each **$15.10** Fancy Finish each **$18.00**

E" — **No. 3WJR925 24** Fibre Floor Lamp. Height 24 inches. Diameter of shade 20 inches. Has silk shade and fringe.
Plain Finish each **$53.60** Fancy Finish each **$55.35**

F" — **No. 3WJR1712R** Fibre Rocker. Spring filled cushion on rattan spring seat. Seat 17x21 inches. Height of back 25 inches.
Plain Finish each **$36.70** Fancy Finish each **$38.50**
(For Tapestry or Velour Covering add $6.45 in addition)

G — **No. 3WJR907 10** Fibre Floor Lamp. Height 58 inches. Diameter of shade 24 inches. Has silk lining and fringe.
Plain Finish each **$47.80** Fancy Finish each **$50.75**

Collectively grouped we portray a magnificent inexpensive suite, which is attractively priced. It is carefully constructed by skilled hands and nicely finished. The covering is a fine quality Cretonne in a very neat and attractive pattern.

"A" — **No. 3WJR2041C** Fibre Chair. Spring filled cushion on coiled spring seat. Seat 19 inches wide 19 inches deep. Back 25 inches high.
Plain Finish each **$28.20** Fancy Finish each **$31.00**

"B" — **No. 3WJR2041D** Fibre Davenport. 72 inches. Spring filled cushions on coiled spring seat. Seat 72 inches wide 20 inches deep. Back 25 inches high. (Arms as included in price.)
Plain Finish each **$84.60** Fancy Finish each **$94.00**
(Genuine Sea Grass, Pillows to match, $6.25 in extra each)

No. 3WJR2041S SAME STYLE IN SETTEE, width 48 inches (not shown). Spring filled cushion on coiled spring seat. Seat 45 inches wide 20 inches deep. Back 25 inches high.
Plain Finish each **$56.40** Fancy Finish each **$62.00**

C" — **No. 3WJR2041T** Fibre Table. Fancy gray wood top. Top 24 inches square. 28 inches high.
Plain Finish each **$23.50** Fancy Finish each **$26.30**

D' — **No. 3WJR2041R** Fibre Rocker. Spring filled cushion on coiled spring seat. Seat 18 inches wide 18 inches deep. Back 25 inches high.
Plain Finish each **$28.20** Fancy Finish each **$31.80**

E" — **No. 3WJR2041GL** Chaise Lounge. Spring filled cushion on coiled spring seat. Seat 24 inches wide 48 inches long. Back 26 inches high.
Plain Finish each **$70.50** Fancy Finish each **$75.00**

No. 3WJR2041DB Fibre Day Bed (not shown). Spring filled cushion on coiled spring seat. Seat 20 inches wide 2 inches long.
Plain Finish, each **$84.60** Fancy Finish each **$94.00**

F. O. B. MICHIGAN FACTORY.

Genuine Fibre Hand Woven Furniture at Factory Prices

The House of Co-operation Inc. 1889 1924

The PLAIN FINISHES are: Light or Dark Baronial Brown. The FANCY FINISHES are: Old Ivory, Frosted Brown, Blue and Gold, Green and Gold, French Gray, Silvertone Black and Bloatan (Tan with a blue rub).
BE SURE TO SPECIFY FINISH WANTED WHEN ORDERING

THE NEW AMBASSADOR BED DAVENPORT SUITE

The New American phase in Furniture as seen at its best in the Davenport Bed suite. Grace and Beauty are combined with thrift and ever last ing strength. A happy addition to the living room library or sun parlor providing an extra bed when the day's done. The Ambassador Davenport Bed can be converted from a comfortable davenport into a full size bed in a few moments. Designed for

Description and prices of articles illustrated:

No. 1WJR2900D Fibre Davenport Bed. Seat opened 72x38 inches, seat opened 72x84 inches. Length over all 84 inches. Spring filled cushion on coiled spring seat. High quality Cretonne covering.
Plain Finish, each **$187.20** Fancy Finish, each **$187.20**
(For Tapestry or Velour Covering add $26.00 Extra)

No. 1WJR2906C Fibre Chair. Spring filled cushion on coiled spring seat. Seat 24x20 inches. High quality Cretonne covering.
Plain Finish, each **$42.90** Fancy Finish, each..... **$42.90**
(For Tapestry or Velour Covering add $6.50 Extra)

No. 1WJR2906R Fibre Rocker. Spring filled cushion on coiled spring seat. Seat 21x20 inches. High quality Cretonne covering.
Plain Finish, each **$42.90** Fancy Finish, each **$42.90**
(For Tapestry or Velour Covering add $6.50 Extra)

Note illustration showing davenport converted into a comfortable full size bed. The bed mattress is of the well known standard spring construction, open at the foot of the davenport seat. Size opened 72x48 inches. The ambassador suite is made of selected reed, strong and firm to hold its form. The luxurious seat cushions, deep and full, are spring filled. The ornamentation is executed in a refined manner and finished in an unsurpassed manner.

DESCRIPTION OF PIECES NOT SHOWN WHICH REGULARLY ARE INCLUDED WITH SUITE

No. 1WJR2900T Fibre Davenport Table. Five-ply wood top. Top, 20x 3 inches
Plain Finish, each **$62.80** Fancy Finish, each **$62.80**

No. 1WJR925 24 Junior Floor Lamp. Height, 60 inches. Diameter of shade, 21 inches
Plain Finish, each **$72.80** Fancy Finish, each **$72.80**

No. 1WJR923 25 Table Lamp. Height, 29 inches. Diameter of shade, 20 inches
Plain Finish, each **$65.00** Fancy Finish, each **$65.00**

Grouped herewith is now for excellent suite made of finest genuine fibre, hand woven. Expert workmanship and finish are very characteristic throughout. High quality Cretonne covering.

"1" **No. 1WJR1727C** Fibre Chair. Spring filled cushion on coiled spring seat. Seat, 19x19 inches. Height of back 37 inches
Plain Finish each **$42.90** Fancy Finish each **$45.50**
(For Tapestry or Velour Covering add $8.45 Extra)

"2" **No. 1WJR1727D** Fibre Davenport. 60 inches. Spring filled cushion on coiled spring seat. Seat 60x21 inches
Plain Finish each **$105.75** Fancy Finish, each **$112.30**
(For Tapestry or Velour Covering add $20.00 Extra)

"3" **No. 1WJR1727R** Fibre Rocker. Spring filled cushion on coiled spring seat. Seat, 19x19 inches. Height of back 25 inches
Plain Finish each **$42.30** Fancy Finish each **$45.50**
(For Tapestry or Velour Covering add $8.45 Extra)

"4" **No. 1WJR1827** Fibre Fern Stand. Height, 30 inches; width, 11 inches, length, 28 inches. Galvanized Metal Liner
Plain Finish each **$20.70** Fancy Finish each **$23.00**

5" **No. 1WJR955** Fibre Table, round. Five-ply wood top. 36 inches round
Plain Finish each **$15.10** Fancy Finish, each **$18.00**

6" **No. 1WJR925 26** Fibre Table Lamp. Height 24 inches. Diameter of shade 20 inches. Has wicker bound and fringe.
Plain Finish each **$53.60** Fancy Finish, each **$63.95**

7" **No. 1WJR967** Fibre Junior Lamp. Height, 54 inches. Diameter of shade, 24 inches. Has Boudoir shade and fringe
Plain Finish, each **$47.80** Fancy Finish, each **$59.75**

F. O. B. MICHIGAN FACTORY.

Hand Woven Genuine Reed Furniture At Factory Prices

EXPERTLY MADE AND EXCELLENTLY FINISHED — **ATTRACTIVELY PRICED IN THIS SELLING**

The PLAIN FINISHES are: Light or Dark Baronial Brown. The FANCY FINISHES are: Old Ivory Frosted Brown, Blue and Gold, Green and Gold, French Gray, Silvertone Black and Bloxtex Tan with a blue rub. Illustration shows both suites upholstered in a high quality attractive design, Cretonne covering. Can also furnish coverings in a high grade, medium weight, Tapestry, in neat figured designs or a fine quality Velour. The Velour colors are solid Blue or Blue Ground with Dark Gold pattern, or Nigger Brown embossed Velour.

BE SURE TO SPECIFY FINISH WANTED WHEN ORDERING

Made of genuine reed, hand woven. Entire suite is remarkably low priced in this selling. Suitable for any room in the home. Resilient and comfortable. Covered with a fine grade Cretonne in an attractive design.

"A" **No. 3WA-19C** Reed Chair. Spring filled cushion on coiled spring seat. Seat 19x18 inches. Back 36 inches high.
Plain Finish, each ..... $38.55 Fancy Finish, each $41.40
(For Tapestry or Velour Covering add $8.45 Last)

"B" **No. 3WA-19DD2** Reed Davenport. Length 72 inches. Spring filled cushion on coiled spring seat. Seat 72x21 inches. Back 39 inches high.
Plain Finish, each ..... $115.65 Fancy Finish, each $125.00
(For Tapestry or Velour Covering add $33.80 Last)

"C" **No. 3WE302 B** Reed Floor Lamp. Has silk lining and fringe. Height, 58 inches. Diameter of shade 24 inches.
Plain Finish, each ..... $66.75 Fancy Finish, each $70.50

"D" **No. 3WA-21S** Reed Plant Stand. Height, 34 inches. Diameter, 10 inches. Has Metal Liner.
Plain Finish, each ..... $14.50 Fancy Finish, each $15.60

E **No. 3WA-19T** Reed Table. 30-inch round woven top.
Plain Finish, each ..... $16.20 Fancy Finish, each $18.30

F **No. 3W1747 1S** Reed Bird Cage and Standard. Height 72 inches. Cage has Metal Pan. Wood Cups and Extension Perch.
Plain Finish, each ..... $30.55 Fancy Finish, each $34.30

"G" **No. 3WA-19R** Reed Rocker. Spring filled cushion on coiled spring seat. Seat 19x18 inches. Back 36 inches high.
Plain Finish, each ..... $38.55 Fancy Finish, each $41.40
(For Tapestry or Velour Covering add $8.45 Last)

DESCRIPTION OF PIECES NOT SHOWN

No. 3WA-19S Reed Settee. Length, 48 inches. Spring filled cushion on coiled spring seat. Seat 21x48 inches. Back 39 inches high.
Plain Finish each ..... $77.10 Fancy Finish, each $82.75
(For Tapestry or Velour Covering add $21.15 Last)

No. 3WA-19D60 Reed Davenport. Length, 60 inches. Spring filled cushion on coiled spring seat. Seat 21x60 inches. Back, 39 inches high.
Plain Finish, each ..... $96.35 Fancy Finish each $103.90
(For Tapestry or Velour Covering add $28.50 Last)

No. 3WA-19CL Reed Chaise Lounge. Spring filled cushion on coiled spring seat. Seat 21x57 inches. Back 39 inches high.
Plain Finish, each ..... $90.25 Fancy Finish each $97.60
(For Tapestry or Velour Covering add $25.40 Last)

No. 3WA-19DB Reed Day Bed. Spring filled cushion on coiled spring seat. Seat, 28x72 inches.
Plain Finish, each ..... $315.65 Fancy Finish, each $325.00
(For Tapestry or Velour Covering add $84.50 Last)

No. 3WE083 6 Reed Table Lamp. Height 26 inches. Diameter of shade 21 inches.
Plain Finish each ..... $44.20 Fancy Finish each $46.10

Competition defied. Manufacturers have permitted us to offer this attractive suite at unheard of prices. We know that it is priced fully 30 per cent below the nearest competitive make and the quality and workmanship is actually superior in every respect. Quantity production accounts for the amazing low prices. It is a very high grade and luxurious suite, constructed of the finest genuine reed, expertly woven by hand. Has luxurious and resilient spring seats and is indeed very comfortable. Upholstered in a very high grade Cretonne covering. Made only the pieces quoted each price sharply underbid. Furnished in any of the finishes listed above.

"A" **No. 1WA-29R** Reed Rocker. Spring filled cushion on coiled spring seat. Seat, 20x20 inches.
Plain Finish, each ..... $37.28 Fancy Finish, each $40.00

"B" **No. 1WA-29DD0** Reed Davenport. Length, 60 inches. Spring filled cushion on coiled spring seat. Seat, 60x23 inches.
Plain Finish, each ..... $83.15 Fancy Finish, each $99.50
For Tapestry or Velour Covering add $26.70 Last)

F. O. B. CHICAGO FACTORY

"C" **No. 3WA-29T** Reed Table. Five-ply wood top. Top, 18x34 inches. Top enameled or stained to match finish on reed work.
Plain Finish each ..... $37.35 Fancy Finish, each $40.00

"D" **No. 3WA 29L** Reed Table Lamp. Height 20 inches. Diameter of shade, 16 inches. Silk lined.
Plain Finish each ..... $26.70 Fancy Finish each $28.00

"E" **No. 3WA 29C** Reed Chair. Spring filled cushion on coiled spring seat. Seat, 20x20 inches.
Plain Finish each ..... $37.35 Fancy Finish each $40.00
(For Tapestry or Velour Coverings add $10.70 Last)

HAND WOVEN GENUINE REED FURNITURE AT FACTORY PRICES

EXPERTLY MADE AND EXCELLENTLY FINISHED. **ATTRACTIVELY PRICED IN THIS SELLING!**

The PLAIN FINISHES are: Light or Dark Parental Brown. The FANCY FINISHES are: Old Ivory, Frosted Brown, Blue and Gold, Green and Gold, French Gray, Silverlene Black and Bleuten (Tan with a blue rub)

Upholstered in a very attractive Crelonne covering, or an excellent medium weight Tapestry in neat figured patterns, or Velour in Solid Blue, Blue Ground with Dark Gold pattern, or Nigger Brown embossed design. Be sure to specify finish wanted when ordering.

From the excellent group above you can easily visualize the true character and magnificence of this beautiful suite. It is masterly constructed of selected combination round and flat cane, hand woven. Upholstered in a very high grade and serviceable Floral Tapestry covering as illustrated, or rich Velour in any color listed above.

"A" **No. 3WA-100C** Reed Chair. Spring filled cushion on coiled spring seat. Coil spring under cushion seat. Seat 20x20 inches.
Plain or Fancy Finish each **$65.00**

"B" **No. 3WG3S 6** Hand Junior Lamp. Has silk lining. Height, 58 inches. Diameter of shade 24 inches.
Plain or Fancy Finish each **$81.00**

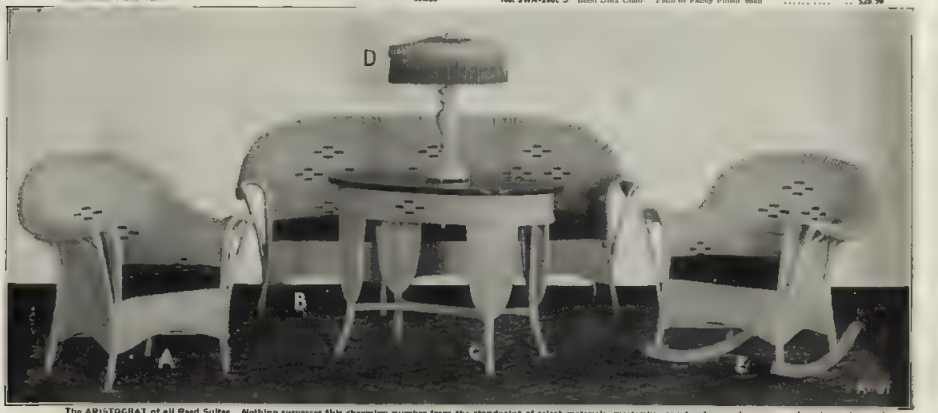
"C" **No. 3WA 100D62** Reed Davenport. Length, 60 inches. Seat 60x23 inches. Spring filled cushion on coiled spring seat.
Plain or Fancy Finish, each **$162.50**

"D" **No. 3WA-100T** Reed Table. Five-ply wood top and shelf. Top, 18x34 inches. Top enameled to match finish on reed work.
Plain or Fancy Finish each **$58.50**

"E" **No. 3WA 100R** Reed Rocker. Spring filled cushion on coiled spring seat. Seat 20x20 inches.
Plain or Fancy Finish each **$65.00**

DESCRIPTION OF PIECES NOT SHOWN

No. 3WG37 6 False Lamp. Has silk lining. Height, 54 inches. Diameter of shade, 20 inches. Complete with cord and plug. Plain or Fancy Finish each **$65.00**
No. 3WA-100S42 Reed Settee. Length, 48 inches. Spring filled cushion on coiled spring seat. Seat, 40x21 inches. Plain or Fancy Finish, each **$130.00**
No. 3WA-100D72 Reed Davenport. Length, 72 inches. Spring filled cushion on coiled spring seat. Seat 72x23 inches. Plain or Fancy Finish, each **$195.00**
No. 3WA 100CL Reed Chair. Spring filled cushion on coiled spring seat. Seat 21x34 inches. Spring filled cushion on coiled spring seat. Plain or Fancy Finish each **$110.00**
No. 3WA 100DB Reed Bed. Spring filled cushion on coiled spring seat. Seat 36x72 inches. Plain or Fancy Finish each **$162.50**
No. 3WA-100DK Reed Desk. Top, 18x36 inches. Plain or Fancy Finish, each **$58.50**
No. 3WA-100C 5 Reed Desk Chair. Plain or Fancy Finish each **$29.50**



The APISTOGRAT of all Reed Suites. Nothing surpasses this charming number from the standpoint of select materials, masterful construction and unsurpassed workmanship and finish. A DISTINCTIVE SUITE FOR THE MAN THAT WANTS THE BEST. Choice of a very high grade Velour covering as illustrated in Solid Blue or Blue Ground with Dark Gold pattern or Nigger Brown embossed design, or a beautiful figured Tapestry at same prices.

"A" **No. 3WA-31C** Reed Chair. Spring filled cushion on coiled spring seat. Seat 20x19 inches. Back 21 inches high.
Plain Finish each ..... **$81.00** Fancy Finish each **$84.00**

"B" **No. 3WA-31DS8** Reed Davenport. Length, 80 inches. Spring filled cushion on coiled spring seat. Seat 71x20 inches. Back 21 inches high.
Plain Finish each ..... **$212.90** Fancy Finish each **$220.45**

"C" **No. 3WA-31T** Reed Table. Oval. Five-ply wood top. Top, 24x42 inches. Top enameled or stained to match finish on reed work.
Plain Finish each ..... **$63.95** Fancy Finish, each **$73.35**

"D" **No. 1WG53S 6** Reed Table Lamp. Has silk lining and fringe. Height, 34 inches. Diameter of shade, 20 inches.
Plain Finish each ..... **$87.35** Fancy Finish, each **$90.70**

"E" **No. 3WA 31R** Reed Rocker. Spring filled cushion on coiled spring seat. Seat, 20x19 inches. Back 21 inches high.
Plain Finish each ..... **$81.00** Fancy Finish, each **$84.00**

F. O. B. CHICAGO FACTORY

DESCRIPTION OF PIECES NOT SHOWN

No. 3WA-31S Reed Settee. Length, 48 inches. Spring filled cushion on coiled spring seat. Seat 21x48 inches. Back, 21 inches high.
Plain Finish each ..... **$167.00** Fancy Finish each **$178.45**
No. 3WA 31D72 Reed Davenport. Length, 72 inches. Spring filled cushion on coiled spring seat. Seat 72x23 inches. Back, 21 inches high.
Plain Finish, each ..... **$253.80** Fancy Finish each **$263.20**
No. 3WA-31CL Reed Chaise Lounge. Spring filled cushion on coiled spring seat. Seat, 21x30 inches. Back, 21 inches high.
Plain Finish, each ..... **$206.70** Fancy Finish each **$216.20**
No. 3WA-31DE Reed Day Bed. Spring filled cushion on coiled spring seat. Seat, 36x72 inches.
Plain Finish, each ..... **$283.80** Fancy Finish, each **$361.20**
No. 3WA-31DK Reed Desk. Kidney shaped five-ply wood top. Has three drawers. Top, 30x36 inches.
Plain Finish, each ..... **$90.25** Fancy Finish each **$96.85**
No. 3WA-31DC Reed Desk Chair.
Plain Finish, each ..... **$30.95** Fancy Finish each **$42.30**

Genuine Reed Furniture of Extra Fine Quality At Factory Prices

FINISHES ARE: "A", Spanish Brown, Royal Blue, Cream Black, Gray. "B", Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green. "C" Gray and Gold, Blue and Gold, Colors, Gray with Blue Border, Cream with Blue Border.
COVERINGS ARE: Grade "H"—Better Cretonnes. Grade "K" Medium Tapestries. Grade "K" Medium Velours.

Est. 1889 1924 The House of Co-operation

The pieces in this suite are made of selected genuine reed, hand woven. Durably constructed and will give utmost satisfaction. Prices each

"A" **No. 1Q2976L** Chair. Height of top of back 39 inches. Loose upholstered cushion and back. Depth of seat 18 inches, height of back 21 inches. Cretonne covering.
Any finish A $60.00 Any finish B $62.50 Any finish C $67.20
For tapestry or velour covering instead of cretonne add $1.20 extra.

"B" **No. 1Q137** Magazine Rack. Height 30 inches. Choice of three finishes.
Any finish A $29.60 Any finish B $30.60 Any finish C $33.80

"C" **No. 1Q2978** 48-inch settee, loose spring seat, cushion over spring seat, upholstered back. Depth of seat 20 inches, height of back, 23 inches. Cretonne covering.
Any finish A $67.20 Any finish B $70.00 Any finish C $74.40
For tapestry or Velour covering instead of cretonne add $7.20 list extra.

"D" **No. 1Q611** Table Lamp, height 20 inches. Cretonne lining. 3-light pull chain cluster, complete with cord and plug.
Any finish A $24.00 Any finish B $26.20 Any finish C.. $30.40

"E" **No. 1Q610** Table, height 30 inches. Oval top 20x32 inches.
Any finish A $34.00 Any finish B $37.20 Any finish "C" $39.60

"F" **No. 1Q2975Z4** Arm Rocker upholstered loose cushion over spring seat and upholstered back. Cretonne covering. Depth of seat 18 inches, height of back 24 inches.
Any finish A $27.60 Any finish B $30.00 Any finish C $32.40
For Tapestry or Velour cover instead of cretonne add $1.20 list extra.
Arm Chair to match furnished at same prices as rocker

"G" **No. 1Q1204** Arm Chair upholstered, cane cushion over spring seat and upholstered back. Cretonne covering. Depth of seat 20 inches, height of back 24 inches.
Any finish "A" $30.00 Any finish B $32.40 Any finish C $34.80
For Tapestry or Velour covering instead of cretonne add $1.20 list extra
(Arm Rocker to match furnished at same prices as arm chair.

The pieces in this suite are made of selected genuine reed, hand woven. Very high grade quality, expertly constructed and especially low priced.

"A" **No. 1Q164** Tearoom Stand. Height, 29 inches; size of top, 18x14 inches.
Any finish A $15.60 Any finish B $15.00 Any finish C $22.80

"B" **No. 1Q151** Telephone Chair. Height of back, 12 inches.
Any finish A $31.00 Any finish B $35.00 Any finish C $36.20

"C" **No. 1Q111E** 48-inch settee, upholstered loose cushion over spring seat and upholstered back. Depth of seat, 20 inches, height of back 24 inches. Cretonne covering.
Any finish A $66.00 Any finish B $69.00 Any finish C $73.20
For Tapestry or Velour covering instead of cretonne add $7.20 list extra.

"D" **No. 1Q2940** Regulation Floor Lamp. Height, 66 inches, 20-inch shade. 3-light pull chain cluster with cord and plug. Cretonne lining.
Any finish A $35.00 Any finish B $37.20 Any finish C $40.20

"E" **No. 1Q130** Table. Height 30 inches, size of top 24x36 inches.
Any finish "A" $28.00 Any finish "B" $30.00 Any finish "C". $31.00

"F" **No. 1Q111C4** Arm Chair, loose cushion over spring seat and upholstered back. Depth of seat, 20 inches, height of back 24 inches. Cretonne covering.
Any finish A $31.00 Any finish B $35.00 Any finish C $37.80
For Tapestry or Velour covering instead of cretonne add $3.60 list extra.

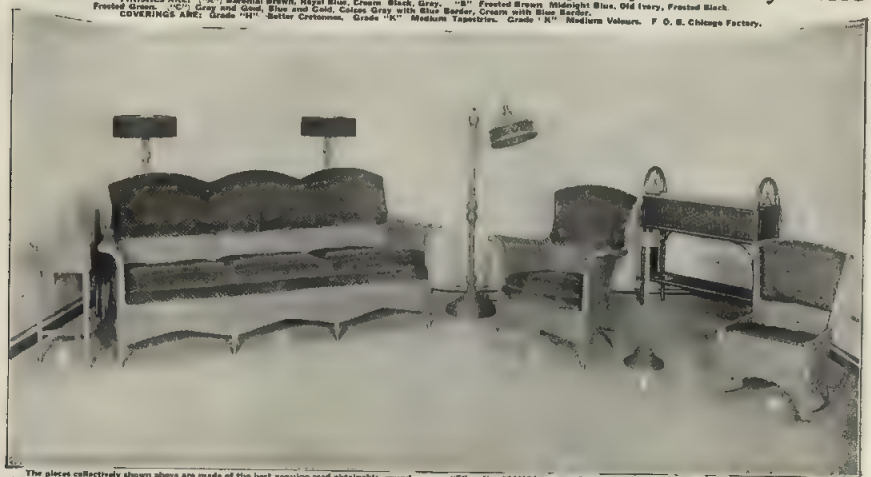
"G" **No. 1Q619** Desk Chair. Depth of seat, 15 inches, height of back, 21 inches.
Any finish "A" $34.00 Any finish "B". $26.40 Any finish "C". $28.80

"H" **No. 1Q630** Desk. Height, 30 inches, top 20x32 inches. Two pockets and one drawer.
Any finish "A". . $66.00 Any finish "B". $68.00 Any finish "C".. $62.40

"I" **No. 1Q111CL** Chair. Lounge chair, spring upholstered cushion and back. Length of seat 36 inches, height of back 23 inches. Cretonne covering.
Any finish A $67.20 Any finish B $70.80 Any finish C $74.40
For Tapestry or Velour covering instead of cretonne add $7.20 list extra.

Genuine Reed Furniture of Ultra Superior Quality at Factory Prices

FINISHES ARE: ("A") Barcelal Brown, Royal Blue, Cream Black, Grey. "B" Frosted Brown Midnight Blue, Old Ivory, Frosted Black
Frosted Green. "C" Grey and Gold, Blue and Gold, Cotton Grey with Blue Border, Cream with Blue Border.
COVERINGS ARE: Grade "H" Better Cretonnes, Grade "K" Medium Tapestries. Grade "L" Medium Velours. F. O. B. Chicago Factory.



The pieces collectively shown above are made of the best genuine reed obtainable round, close and fine hand woven. Harmonizes with other costly furniture and is suitable for any room in the home. Prices each.

"A" No. 3Q600 End Table. Height, 26 inches. Top 20x24 inches.
Any finish "A" **$20.40**

"B" No. 3Q624F4¼ 72-inch Settee, spring seat with reversible cushion and tufted arm rests. Depth of seat, 20 inches, height of back 40 inches. Back has diamond
Any finish "A" **$161.20** Any finish B **$168.80** Any finish C **$172.00**
Tapestry covering furnished at same prices. Extra for reversible cushion **$10.00** per

"C" No. 3Q628 Table Lamp. Height 32 inches. Length of shade 15 inch shade 24 inch full
Any finish A **$28.80** Any finish B **$30.00** Any finish C **$31.20**

"D" No. 3Q626 Boudoir Lamp. Height 22 inches. Diameter of shade, 12 inches. Arms with arm
Any finish A **$30.00** Any finish B **$32.40** Any finish C **$34.80**

"E" No. 3Q624C4 Arm Chair spring seat with reversible cushion and tufted arms. Depth of seat, 20 inches, height of back 40 inches. Back has diamond
Any finish A **$61.20** Any finish B **$61.60** Any finish C **$66.00**
Tapestry covering furnished at same prices. Extra for reversible cushion **$3.00** set

Arm Rocker to match furnished at same prices as arm chair.

"F" No. 3Q127 Sanitary Couch with spring seat. Depth of seat 20 inches. Length of couch
Any finish A **$31.90** Any finish B **$12.50** Any finish C **$13.10**

"G" No. 3Q604 Fern Jardiniere with spring base. Height 30 inches, top 20x20 inches
Any finish A **$34.00** Any finish B **$36.00** Any finish C **$37.20**

"H" No. 3Q621B Rocker, spring seat, reversible cushion, tufted arms and back. Height of back, 29 inches
width of seat 18 inches. Cane back, with cane seat
Any finish A **$36.00** Any finish B **$38.40** Any finish C **$40.20**
Tapestry covering furnished at same prices. For Cretonne covering, deduct $3.00 set

(Arm Chair to match above rocker furnished at same prices.)

Another most easy-to-te showing of ultra superior quality genuine reed hand woven. The best obtainable (round, close and fine). Expertly made and elegantly finished. Especially low priced in this selling. Prices each.

"J" No. 3Q618C4 Arm Chair spring seat with reversible cushion and tufted arms, back
Width of seat, 20 inches, depth 20 inches. Back has diamond
Any finish A **$62.40** Any finish B **$64.80** Any finish C **$67.20**
Tapestry covering furnished at same prices. For Cretonne covering, deduct $4.80 set

"K" No. 3Q612 Reception Chair with spring seat, reversible cushion and tufted arms
Any finish "A" **$55.00** Any finish B **$58.20** Any finish C **$60.60**

"L" No. 3Q618E4¼ 48-inch Settee spring seat with reversible cushion and tufted back
Depth of seat 22 inches, height of back 38 inches. Back has diamond
Any finish A **$124.80** Any finish B **$128.00** Any finish C **$132.80**
Tapestry covering furnished at same prices. For Cretonne covering, deduct $7.40 set

"D" No. 3Q607 Table
Any finish A **$41.40** Any finish B **$41.20** Any finish C **$48.00**

"E" No. 3Q629 Table, top 20 inches square, frame of iron and wood. Light pull chain
Any finish "A" **$28.80** Any finish B **$30.00** Any finish C **$31.20**

"F" No. 3Q613 Tea Waggon. Height 30 inches, removable tray 24x14 inches, finished in oak or ivory, with rubber tired wheels. Tapestry or velour under glass
Any finish A **$75.60** Any finish B **$78.00** Any finish C **$80.40**

"G" No. 3Q618D4½ Arm Rocker spring seat with outer spring cushion and tufted oil back
Width of seat 20 inches, height of back 39 inches. Back has diamond
Any finish A **$62.40** Any finish B **$64.80** Any finish "C" **$67.20**
Tapestry covering furnished at same prices. For Cretonne covering, deduct $3.00 set

HAND WOVEN GENUINE REED FURNITURE AT FACTORY PRICES

EXPERTLY CONSTRUCTED AND ELEGANTLY FINISHED. The PLAIN FINISHES are: Light or Dark Baronial Brown. The FANCY FINISHES are: Old Ivory, Frosted Brown, Blue and Gold, Green and Gold, French Gray, Silvertone Black, and Mexican (Tan with a blue rub).

PRICED VERY LOW IN THIS SELLING. BE SURE TO SPECIFY FINISH WANTED WHEN ORDERING.

Made of genuine reed, hand woven. Have resilient seats and comfortable backs. Of durable construction throughout. Will prove highly serviceable and is very reasonably priced. The Cretonne covering is of fine quality in a neat and attractive design. Upholstered pieces obtainable in Velour or Tapestry at a slight advance over the Cretonne

"A" **No. 3WA-41S** Reed Rocker. Spring filled cushion on coiled spring seat. Seat, 18x19 inches. Back 35 inches high. Plain Finish, each $12.75
Fancy Finish, each $13.50

"B" **No. 3WA 41R** Reed Rocker. Spring filled cushion on coiled spring seat. Seat, 18x19 inches. Back 35 inches high. Plain Finish, each $31.50
(For Tapestry or Velour Covering add $8.40 Extra)
Fancy Finish, each $34.50

"C" **No. 1WG102 S** Reed Floor Lamp. Has silk lining and fringe. Height 64 inches. Diameter of shade 18 inches. 2 light pull chain cluster silk cord and plug. Plain Finish, each $58.75
Fancy Finish, each $65.00

"D" **No. 3WA 41D72** Reed Davenport. Length, 72 inches. Spring filled cushion on coiled spring seat. Seat, 23x72 inches. Back 36 inches high. Arms 24 inches high and 7 inches wide. Loose cushions to match. Reed frame is reinforced for added strength. Plain Finish, each $94.50
Fancy Finish, each $103.90

E" **No. 3WA-43** Reed Table. Five-ply wood top. Top measures 28x40 inches. Top enameled or stained to match finish on reed work. Plain Finish, each $37.60
Fancy Finish, each $43.25

F" **No. 1WA-18** Reed Floor Lamp. Has silk lining and fringe. Height, 70 inches. Diameter of shade 18 inches. 2 light pull chain cluster silk cord and plug. Plain Finish, each $24.80
Fancy Finish, each $27.30

G" **No. 1WA1794** Reed Lamp Stand. Galvanized Metal Liner. Height 30 inches. Length, 32 inches. Width, 13 inches. Plain Finish, each $16.00
Fancy Finish, each $17.85

H **No. 3WA 41C** Reed Arm Chair. Spring filled cushion on coiled spring seat. Seat, 18x19 inches. Back 34½ inches high. Arms 24 inches high and 7 inches wide. Loose cushions to match. Reed frame is reinforced for added strength. Plain Finish, each $31.50
Fancy Finish, each $34.50

Made of genuine reed, hand woven. Have resilient seats and comfortable backs. Of durable construction throughout. Will prove highly serviceable and is priced very low. The Cretonne covering is of a fine quality in a neat and attractive pattern. Upholstered pieces obtainable in Tapestry or Velour at a slight advance over the Cretonne.

"A" **No. 3WA 1C** Reed Chair. Spring filled cushion on coiled spring seat. Seat, 18x19 inches. Back 35 inches high. Plain Finish, each $36.70
Fancy Finish, each $39.50

(For Tapestry or Velour Covering add $4.65 Extra)

"B" **No. 3WA 2D** Reed Davenport. With spring filled cushions on coiled spring seat. Seat 2 x 2 inches. Back 26 inches high. Slanting Arms. Plain Finish, each $110.00
Fancy Finish, each $119.40

(For Tapestry or Velour Covering add $38.40 Extra)

Reversible Cretonne Pillows, each ..... $ 9.30
In Tapestry or Velour, each 11.65

"C" **No. 1WA 1T** Reed Table. Five-ply wood top and shelf. Top, 24x24 inches. Top enameled or stained to match finish on reed work. Plain Finish, each $32.50
Fancy Finish, each $35.45

D" **No. 1WG013 3** Reed Table Lamp. Has silk lining. Height 22 inches. Diameter of shade, 20 inches. 2 light pull chain cluster silk cord and plug. Plain Finish, each $49.95
Fancy Finish, each $52.25

E" **No. 3WA-1R** Reed Rocker. Spring filled cushion on coiled spring seat. Seat, 18x19 inches. Back 35 inches high. Plain Finish, each $36.70
Fancy Finish, each $38.50

(For Tapestry or Velour Covering add $4.65 Extra)

F" **No. 3W3725 '33** Reed Bird Cage and Standard. Height 72 inches. Cage has removable centre pan and reed cups. Plain Finish, each $34.80
Fancy Finish, each $38.35

G" **No. 1WA-1CL** Reed Chaise Lounge. Spring filled cushion on coiled spring seat. Seat, 22 inches. Back 26 inches high. Plain Finish, each $91.65
Fancy Finish, each $99.20

(For Tapestry or Velour Covering add $25.40 Extra)

H **No. 3WG462 12** Reed Bridge Lamp. Has silk lining and fringe. Height 50 inches. Diameter of shade 13 inches. 2 inch pull chain cluster, silk cord and plug. Plain Finish, each $50.75
Fancy Finish, each $53.00

F. O. B. CHICAGO FACTORY

Extra Fine Quality Genuine Hand Woven Reed Articles at Factory Prices

Durably constructed and elegantly finished. Especially low priced in this Selling. "Add-A-Piece" of Reed Furniture which is suitable and appropriate for any room in the home.

REED TABLE LAMP

A most exquisite model as shown, carefully constructed of selected genuine reed—the best obtainable (round, close and fine) hand woven. Height 26½ inches over all. Fine Cretonne Lining. Height, 22 inches. Parasol shade, 17 inches.

Finishes	"A"	"B"	"C"
No. 3Q544 Each	$33.60	$34.80	$36.00

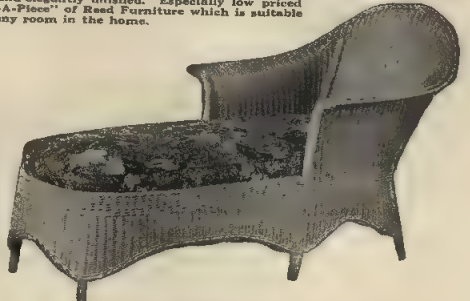
If silk lining is wanted instead of Cretonne, add $1.80 to list extra.

OUR THREE FINISHES ARE IN THE FOLLOWING COLORS:

Finish "A"—Baronial Brown, Royal Blue, Cream, Black, Gray.

Finish "B"—Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green.

Finish "C"—Gray and Gold, Blue and Gold, Calces Gray with Blue Border, Cream with Blue Border.



No. 3Q608CL Chaise Longue (Matches Rocker, Chair and Settee shown below)

Expertly constructed of selected Genuine Reed—the best obtainable (round, close and fine), hand woven. Inner coil construction over coiled springs. Cretonne covering.

Finishes	"A"	"B"	"C"
No. 3Q608CL Each	$63.00	$66.60	$68.20

For Tapestry or Velour covering instead of Cretonne, add $7.40 list extra.

F. O. B. CHICAGO FACTORY

No. 3Q688D3½ Arm Rocker (Matches Settee, Chair and Chaise Longue shown herewith)

Made of Genuine Reed—the best obtainable (round, close and fine) hand woven. Spring seat with inner spring cushion. Seat 18 inches wide, back 21 inches high. Better grade "B" Cretonne lining.

Finishes	"A"	"B"	"C"
No. 3Q688D3½ Rocker each	$46.80	$48.20	$51.60

For Tapestry or Velour covering, add $1.80 list extra.

CONSOLE OR DAVENPORT END TABLE

A practical end table which serves to fully complete reed furnishings. It is expertly constructed of selected genuine reed—the best obtainable (round, close and fine) hand woven. Height 26 inches. Top measures 12x24 inches. Beautifully finished in any of the colors listed above.

Finishes	"A"	"B"	"C"
No. 3Q600 Each	$20.48	$21.60	$22.80

No. 3Q688C3½ Arm Chair (Matches Chaise Longue, Rocker and Settee shown herewith)

Made of Genuine Reed—the best obtainable (round, close and fine) hand woven. Spring seat with inner spring cushion. Seat, 18 inches wide, back 21 inches high. Grade "B" Better Cretonne lining.

Finishes:	"A"	"B"	"C"
No. 3Q688C3½ Chair each	$46.80	$48.20	$51.60

For Tapestry or Velour covering add $1.80 list extra.

72 or 48 Inch Reed Settee (Matches Chaise Longue, Rocker and Chair shown above)

Made of Genuine Reed—the best obtainable (round, close and fine) hand woven. Inner spring cushion over coiled springs. Grade "B" better Cretonne covering. Choice of 72 inch or 48 inch sizes.

Finishes:	"A"	"B"	"C"
No. 3Q688F3 [illegible] each	$182.60	$187.40	$196.20
Finishes:	"A"	"B"	"C"
No. 3Q688E3 [illegible] inch settee, each	$126.80	$130.40	$134.00

For Tapestry or Velour covering, add $[illegible] list extra.

REED TABLE LAMP

A charming style [illegible] and unique construction in its [illegible] pattern. Expertly constructed of selected genuine Reed—the best obtainable (round, close and fine), hand woven. 2-light pull chain cluster, silk cord and plug. Height, 24 inches; diameter of shade 15 inches. Lined with Grade "B" Better Cretonne.

Finishes:	"A"	"B"	"C"
No. 3Q646 Each	$30.60	$31.80	$33.00

For Silk lining, add $0.00 list extra.

EXTRA FINE QUALITY GENUINE REED HAND WOVEN ARTICLES AT FACTORY PRICES

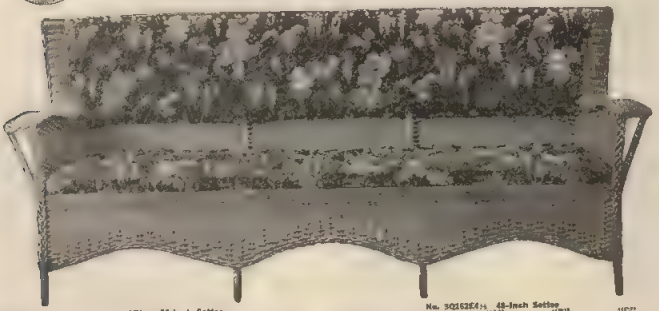
Expertly constructed and excellently finished. Prices remarkably low. "Add-A-Piece" of Reed Furniture which is suitable for any room in the home.

The Three Finishes Are:

"A"—Sarsenial Brown, Royal Blue, Cream, Black, Grey.

"B" Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green.

"C"—Grey and Gold, Blue and Gold, Colors, Grey with Blue Border, Cream with Blue Border.



No. 3Q162F4 : 72-Inch Settee

Finishes.	"A"	"B"	"C"
Each	$120.00	$126.00	$132.80

No. 3Q162E4½ 48-Inch Settee

Finishes:	"A"	"B"	"C"
	$81.60		$85.20

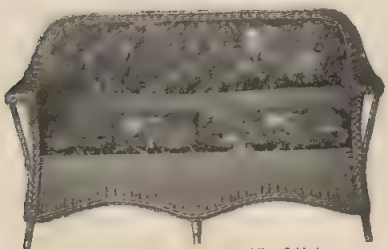
REED FLOOR LAMP

This is a most exquisite high grade number that is made of choicest Genuine Reed—the best obtainable (round close and fine), hand woven. Fitted with two-light cluster silk cord and plug. Height 60 inches. Diameter of shade, 26 inches. Lined with Grade "B" Better Cretonne.

No. 3Q612A	each $76.20
No. 3Q612B	each 78.80
No. 3Q612C	79.80

Can furnish Silk [illegible] for $2.60 list extra

F. O. B. CHICAGO FACTORY



No. 3Q615E4½ 48-Inch Settee in choice of three finishes)

Finishes:	"A"	"B"	"C"
Each	$106.20	$101.80	$107.40

For Tapestry or Velour coverings add $7.20 list extra

No. 3Q615F4½ 72-Inch Settee (in choice of three finishes)

	"A"	"B"	"C"
Each	$112.80	$118.60	$143.40

For Tapestry or Velour covering, [illegible] list extra

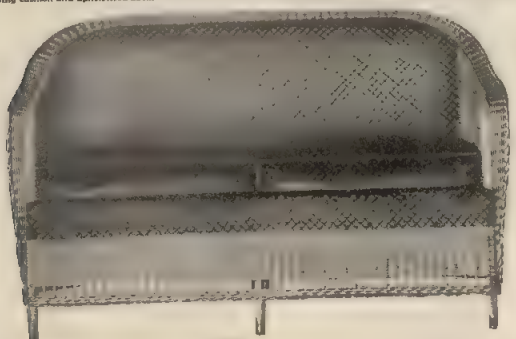
REED ROCKER OR CHAIR

Seat, 19 inches wide. Back, 19 inches high.

Finishes:	"A"	"B"	"C"
No. 3Q615D4½ Rocker each	$41.80	$46.20	$48.60
No. 3Q615C4 [illegible]	41.80	46.20	48.60

[illegible] ring add $3.00 list extra.

Illustrated above are two pieces of the four pieces made in this suite. Made of selected genuine reed (the best obtainable (round, close and fine), hand woven. Spring seat with inner spring cushion and upholstered back. Cretonne covering. Also obtainable in Tapestry or Velour at a slight additional cost as quoted.



No. 3Q132E4 [illegible] Settee, 48 inches.

Finishes:	"A"	"B"	"C"
[illegible]	$81.20	$84.80	$88.40

REED ROCKER OR CHAIR

Seat, 19 inches wide. Back [illegible] inches high.

Finishes:	"A"	"B"	"C"
No. 3Q132D4½ Rocker, each	$41.80	$46.20	$48.60
No. 3Q132C4 [illegible]	41.80	46.20	48.60

There is such a pleasing contour and symmetry in design of the pieces shown in this graceful suite. Made of selected and choicest genuine reed, woven by hand. Spring seat with inner spring cushion and upholstered back. Rich Velour covering. Can be furnished in high grade Tapestry in seat and attractive figured patterns at some prices.

Extra Fine Quality Genuine Hand Woven Reed Furniture

at Factory Prices

Well made and elegantly finished. Attractively priced in this selling.

"ADD-A-PIECE" of reed furniture which is suitable for any room in the home.

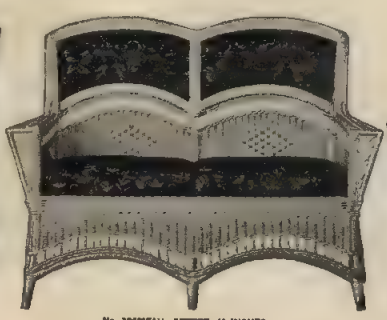
OUR THREE FINISHES ARE:

"A" Barenia Brown, Royal Blue, Cream, Black, Gray.
"B" Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green.
"C" Gray and Gold, Blue and Gold, Calcos, Gray with Blue Border, Cream with Blue Border.

No. 3Q639D4½ ARM ROCKER

Any Finish	"A"	"B"	"C"
Each, flat	$82.40	$64.80	$67.20

Seat, 20 inches wide, back, 24 inches high.



No. 3Q639E4½ SETTEE, 48 INCHES

Any Finish	"A"	"B"	"C"
Each, flat	$128.80	$122.40	$125.00

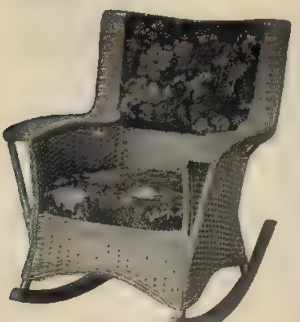
No. 3Q639F4½ SETTEE, 72 INCHES (Matches Above)

Any Finish	"A"	"B"	"C"
Each, flat	$246.40	$176.40	$175.20

No. 3Q639C4½ ARM CHAIR

Any Finish	"A"	"B"	"C"
Each, flat	$62.40	$64.80	$67.20

Seat, 20 inches wide, back, 24 inches high.



No. 3Q162D4½ ARM ROCKER
(Furnished in Chair and 48-inch and 72-inch Settee to match)

The three pieces shown above constitute a very popular and good selling suite that is exceptionally well made and finished. Made of selected genuine reed—the best obtainable, (round, close and fine) hand woven. All pieces have spring seat with inner spring cushion and upholstered back. Covered with the high grade "B" Cretonne. Can furnish the above with Tapestry or Velour covering at the following slight additional cost; Rocker or Chair $3.20 list extra; 48-inch settee, $7.20 list extra; 72-inch Settee, $10.80 list extra.

The rocker shown to the left is a popular number and can be furnished in chair, and 48-inch and 72-inch settee to match. Covered with Cretonne, however, all pieces obtainable in Tapestry or Velour as a slight additional cost. All pieces have spring seat with inner spring cushion and upholstered back. Rocker and chair measure as follows: Seat 20 inches wide, back 21 inches high.

Finishes	"A"	"B"	"C"
No. 3Q152D4½ Rocker, each	$35.60	$35.80	$41.40
No. 3Q152C4½ Chair, each	16.60	19.80	21.40
For Tapestry or Velour covering add $7.80 list extra			
No. 3Q152E4½ 48-inch settee, each	$61.60	$65.20	$68.80
For tapestry or Velour covering add $ .80 list extra			
No. 3Q152F4½ 72-inch Settee, each	$120.60	$126.00	$132.80
For Tapestry or Velour covering add $12.00 list extra			

No. 3Q294D2 ARM ROCKER
(Furnished in Chair and 48-inch Settee to match.)

The rocker illustrated to right is exceptionally low priced. Obtainable in chair and 48-inch settee to match. Covered with Cretonne. All pieces have spring seat with inner spring cushion and upholstered back. Rocker and chair measure as follows: Seat, 18 inches wide, back, 18 inches high.

Finishes	"A"	"B"	"C"
No. 3Q294D4 Rocker, each	$21.80	$25.40	$25.80
No. 3Q294C4 Chair, each	21.00	23.40	25.80
No. 3Q294E4 48-inch Settee, each	57.60	61.20	64.80

Looks approximate the construction offered in rocker shown to left with large back. For magazine covering use extra. This high grade rocker is also made in a chair to match. Cretonne lining however can also be furnished in Tapestry or Velour covering at a slight additional cost. Seat pieces measure as follows: Seat 19 inches wide and back, 19 inches high and have spring seat with inner spring cushion and upholstered back.

Finishes	"A"	"B"	"C"
No. 3Q163D4½ Rocker, each	$43.40	$43.80	$46.20
No. 3Q163C4½ Chair, each	41.40	43.80	45.20
For Tapestry or Velour covering add $3.60 list extra.			

No. 3Q163D4½ ARM ROCKER
(Furnished in Arm Chair only to match)

No. 3Q386D3½ ARM ROCKER
(Furnished in Chair and 48-inch and 72-inch Settee to match.)

The distinctive rocker portrayed to right is made of combination round and flat genuine reed. Furnished in Chair, 48-inch and 72-inch Settees to match. Cretonne covering. Also furnished Tapestry or Velour at a slight additional cost. All pieces have spring seat with inner spring cushion. Rocker and chair measure as follows: Seat 18 inches wide and back 18 inches high.

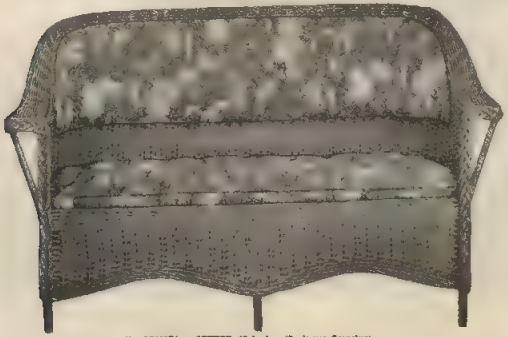
Finishes	"A"	"B"	"C"
No. 3Q386D3½ Rocker each	$30.80	$32.40	$34.80
No. 3Q386C3½ Chair each	28.00	32.40	34.80
For Tapestry or Velour covering add $4.80 list extra			
No. 3Q386E3½ 48-inch settee each	$68.40	$72.00	$75.60
For Tapestry or Velour covering add $ .60 list extra			
No. 3Q386F3½ 72-inch Settee each	$99.00	$104.40	$109.20
For Tapestry or Velour covering, add $10.80 list extra			

F. O. B. CHICAGO FACTORY

Extra Fine Quality Genuine Reed Hand Woven Articles at Factory Prices

Durably constructed and elegantly finished Especially low priced.

"ADD-A-PIECE" OF REED FURNITURE WHICH IS SUITABLE FOR ANY ROOM IN THE HOME. THE THREE FINISHES ARE:
"A" Baronial Brown, Royal Blue, Cream, Black, Gray. "B" Frosted Brown, Midnight Blue, Old Ivory, Frosted Black, Frosted Green.
"C" Gray and Gold, Blue and Gold, Calcos, Gray with Blue Border, Cream with Blue Border.



No. 3Q128E4 , SETTEE, 48 Inches (Cretonne Covering)

Any Finish	"A"	"B"	"C"
Each, list	$84.80	$87.60	$91.20

For Tapestry or Velour covering instead of cretonne, add $7.20 list extra

No. 3Q128F4½ SETTEE, 72 Inches (Same as Above, Cretonne Covering)

Any Finish	"A"	"B"	"C"
Each, list	$124.80	$125.60	$134.40

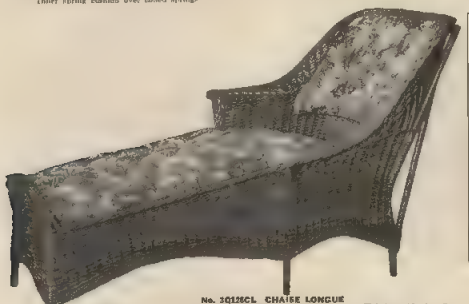
For Tapestry or Velour covering instead of cretonne, add $10.80 list extra
Inner spring cushion over coiled springs

No. 3Q128D4½ ARM ROCKER

Inner spring cushion over coiled springs. Seat, 18 inches wide; back, 20 inches high.

Any Finish	"A"	"B"	"C"
Each, list	$39.00	$43.40	$43.80

For Tapestry or Velour covering instead of cretonne, add $3.60 list extra



No. 3Q128CL CHAISE LONGUE

Seat, 51 inches long; back, 23 inches high. Inner spring cushion. Upholstered back. Cretonne covering

Any Finish	"A"	"B"	"C"
Each, list	$88.80	$92.40	$96.00

For Tapestry or Velour covering instead of cretonne, add $7.20 list extra

The four pieces illustrated and quoted above match and are ofone suite. All pieces are made of selected genuine reed, woven by hand. Illustrations show pieces covered with our high grade "H" Cretonne; however same can be ordered with our fine grade "K" Tapestry or Velour in neat and attractive figured patterns at slight additional cost as quoted. This number is an excellent pattern, expertly made and finished and priced very low in this setting.

No. 3Q128C4½ ARM CHAIR

Inner spring cushion over coiled springs. Seat, 18 inches wide; back, 19 inches high.

Any Finish	"A"	"B"	"C"
Each, list	$39.00	$43.40	$43.80

For Tapestry or Velour covering instead of cretonne, add $3.60 list extra

Round Selected Genuine Reed Woven by Hand

No. 3Q164E3½ SETTEE, 48 Inches (Cretonne Covering)

Spring seat with inner spring cushion

Any Finish	"A"	"B"	"C"
Each, list	$91.20	$94.80	$98.40

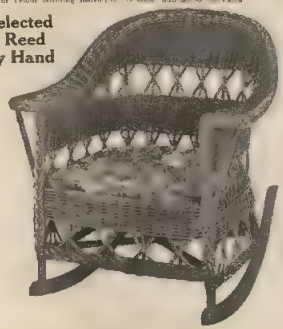
For Tapestry or Velour covering instead of cretonne, add $3.60 list extra

No. 3Q164F3½ SETTEE, 72 Inches (Cretonne Covering)

Spring seat with inner spring cushion.

Any Finish	"A"	"B"	"C"
Each, list	$135.90	$138.80	$144.60

For Tapestry or Velour covering instead of cretonne, add $5.40 list extra.



No. 3Q164D3½ ARM ROCKER
No. 3Q164C3½ ARM CHAIR

Spring seat with inner spring cushion. Seat, 19 inches wide; back, 19 inches high.

Any Finish	"A"	"B"	"C"
Each, list	$42.00	$44.40	$46.80

For Tapestry or Velour covering instead of cretonne, add $1.80 list extra.

F. O. B. CHICAGO FACTORY

Genuine Hand Woven Fibre and Reed Furniture at Factory Prices

Expertly made and Finished. Prices remarkably low.
The Plain Finishes are: Light or Dark Baronial Brown.
The Fancy Finishes are: Frosted Brown, Old Ivory, French Gray, Blue and Gold, Green and Gold. Silvertone Black and Bloctan (which is Tan with a Blue rub.

FIBER FERN STAND

An attractive design with a pleasing blue skirt which enriches its appearance. Constructed of Genuine Fiber, hand woven. Height 28 inches width, 11 inches length, 28 inches. Has galvanized metal liner Choice of any of the Plain or Fancy finishes described above

No. 3WJR1200P	Plain Finish, each	$23.15
No. 3WJR1200F	Fancy Finish, each	25.50

FIBRE FERN STAND

In a single plant stand this is a fast selling number and matches fern stand shown to left. Constructed of genuine fibre, hand woven and finished to any color listed above. Height, 26 inches, 11 inches square. Galvanized metal liner.

No. 3WJR1002P	Plain Finish, each	$ 8.45
No. 3WJR1002F	Fancy Finish, each	10.80

FIBER FERN STAND

This is a popular number and a staple design that is priced very low for such a strong serviceable, expert workmanship and finish. Made of genuine fibre hand woven. Galvanized metal liner. Height 28 inches width 11 inches length, 28 inches. Choice of any of the Plain or Fancy finishes listed above.

No. 3WJR1001P	Plain Finish, each	$13.00
No. 3WJR1001F	Fancy Finish, each	16.00

REED FERN STAND

Featured with the ring handle at each end which permits ready movement about. It is a design of liberal dimensions constructed of genuine reed woven by hand. Length 30 inches width, 18 inches height, 29 inches. Galvanized metal liner. Choice of any of the Plain or Fancy finishes listed above.

No. 3WJ764P	Plain Finish, each	$12.70
No. 3WJ764F	Fancy Finish, each	14.60

REED PLANT STAND

In a single plant stand the style shown above is the most symmetrical and pleasing pattern made. It is constructed of genuine reed hand woven. Height 42 inches. Has 10 inch metal liner. Choice of any of the finishes described above.

No. 3WJ711P	Plain Finish, each	$7.60
No. 3WJ711F	Fancy Finish, each	7.60

REED FERN STAND

In a high quality and attractive design we offer excellent value in number portrayed above. It is expertly constructed of genuine reed and all woven by hand. Finished in any color listed above which specify when ordering. Length, 28 inches width 0 inches height, 30 inches. Galvanized metal liner. Ring handles.

No. 3WJ800P	Plain Finish, each	$15.00
No. 3WJ800F	Fancy Finish each	17.90

REED TABLE LAMP

An inexpensive table lamp which is constructed by expert hands and neatly finished. Height, 20 inches, Diameter of shade, 16 inches. Silk lined and silk fringe. Has two light pull chain sockets, silk cord and plug

No.		Each
3WA18P	Plain Finish	$24.90
3WA18F	Fancy Finish	27.25

REED TABLE LAMP

A popular priced lamp that has been a wonderful seller. It is expertly constructed of genuine reed hand woven and lacquered in any of the plain or fancy colors listed above. Height 24 inches diameter of shade 20 inches. Silk lined and heavy silk fringe. Has two light pull chain cluster silk cord and plug.

No. 3WG813P	Plain Finish each	$27.38
No. 3WG813F	Fancy Finish each	29.60

REED TABLE LAMP

An exceptional high grade lamp with a beautiful loving cup vase effect base. It is expertly constructed of selected genuine reed (the best obtainable—round, close and fine) hand woven. Height, 26 inches diameter of shade, 20 inches. Two-light pull chain cluster silk cord and plug. Silk lined and heavy silk fringe.

No. 3WG822P	Plain Finish each	$51.70
No. 3WG824F	Fancy Finish, each	54.00

REED TABLE LAMP

This design has singular grace and charm that is very pronounced. The most exquisite standard cluster lamp in richness and individuality. Constructed of genuine reed—the best obtainable (round, close and fine) hand woven. Height, 34 inches diameter of shade, 20 inches Silk lined and heavy silk fringe. Has two-light pull chain cluster, silk cord and plug.

No. 3WG828P	Plain Finish each	$57.25
No. 3WG828F	Fancy Finish each	59.75

# of The Value Tie-Ups

tional advertisers included in the tie-ups, it is possible to secure more far reaching results with the use of tie-up products.

Neckwear

Throughout the picture Percy Marmont, and the other mere men in the production are especially well dressed Therefore great care seems to have been given to the matter of neckwear And fortunately, there are any quantity of stills for use in a window display tying-up 'Broken Laws with the product of the Franklin Knitting Mills 'Fashionknit" scarves

Almost any stills in which the men appear are appropriate. Nos. 7, 114, 52 —selected at random—will give you the idea. There are some specially posed close-ups of Mr. Marmont, and the others which may also be secured

This still—No. 2—will win the cooperation of the local shoe merchants in boosting business for your showing of "Broken Laws." The F. B. O. film offers many window tie-ups both National and local.

Clothes

Almost the same thing may be said for the National Tie-Up with "GGG" clothes. Every variety of apparel is represented. There are stills of the leading characters in sport clothes, business suits, and evening wear. And plenty of "party" pictures, showing good looking things to wear.

Nos. 39, 41, 115, 72, 90, 124, 99, 45, 36, 37, 38, 41—are just a few that will indicate the thought. The "GGG" people have some very fine posters and other display material. The sort that makes folks stop and look. This window display will do your show much good—and will also increase sales for your merchant friend.

Pebeco

Lehn and Fink, Inc., manufacturers of "Pebeco" dentifrice, and other things, are one of the most extensive advertisers in America You may cash in on their advertising appropriation by tying-up your showing of "Broken Laws" with their product

They have pledged cooperation and will be happy to assist you and their dealers in making this National Tie-Up one hundred percent effective. There are no special stills featuring "Pebeco," but there are a number of pictures showing smiles and fine teeth, and these will answer your purpose. Cleverly worded window cards referring to "Broken Laws" will do the rest

Brassieres

Tie-up with dealers in lingerie, brassieres, hosiery, and the other intimate apparel of femininity, by skilfull arrangement of those stills from "Broken Laws" showing the women characters in all their splendor of raiment.

So far as brassieres are concerned, the manufacturers of Model (Criss-Cross) Brassieres are right in back of you to make a big mutual publicity campaign for your show and their product.

Here again the window card may be relied upon to do its share in selling both picture and product. The idea of "Broken Laws" of good form in dress is one that lends itself to ready adaptation

Knitted Wear

A timely tie-up is that offered "Broken Laws" by the New York Knitting Mills, manufacturers of knitted outer things for men, women and children. There are appropriate stills for this display such as No. 67 and as this is a really seasonable tie-up, you should secure as many windows as possible

The mills will be glad to forward as much window material as you can use It is only necessary to advise EXHIBITORS TRADE REVIEW as to the quantity of displays, and the dates upon which you will show "Broken Laws."

Boys' Clothes

Another exceptional tie-up is presented by Ben Weiner, and Co., who are the originators of "Penrod" clothes These are special boys' things, and tie-up remarkably well with some of the kid stills from the picture.

Nos. 34, 42 and others will show you how. The "Penrod" people have agreed to back your showing of this F. B. O.

An appealing still is No. 43 from F. B. O.'s "Broken Laws." Beside creating atmosphere for the picture it will tie-up well with merchants selling children's articles.

picture, and the tie-up is bound to make friends for your theatre as well as for the merchants lending their window cooperation

In arranging your windows do not neglect to inject some pictures denoting the atmosphere of the picture. Scenes of the dances, the parties, the children, the trial, and others will arouse interest and curiosity regarding your showing.

Obviously the tie-up here is with razors, shaving soaps, and similar articles. The picture is still No. 86 from F. B. O.'s "Broken Laws," and is but one of the many that will secure you window ads.

Even the remonstrances of a patient husband are meffectual in curbing this wife's love of the jazz-age life. Percy Marmont and Jackie Saunders present striking characterizations In "Broken Laws," the true to life F. B. O. photodrama

Percy Marmont, as the home-loving husband in F. B. O.'s "Broken Laws," is gradually driven to ruin by the mad whims of the foolish wife he adores.

Mrs. Wallace Reid portrays the adoring mother in F. B. O's "Broken Laws." The blind love she lavishes upon her son is the cause of his final downfall.

There is nothing that has greater appeal than childhood, and in F. B. O.'s "Broken Laws" there is a stirring story of children, and how they are made to suffer in after life because of the lax supervision of parents in their tender years.

'Broken Laws'

With an Ounce of Showmanship You Can Bring the Whole Town to Your Theatre for the Showing of This Big F. B. O. Photodrama

The Importance of The Lobby

It Is the Closing Argument That Sells Your Show

YOUR exploitation campaign is sadly incomplete if you neglect your lobby Its appeal is the final point in your selling talk—the knockout punch that wins the day.

You will gain publicity for your showing of "Broken Laws" through National Tie-Ups, window displays in local shops, newspaper publicity, civic cooperation, contests, stunts, and ballys. But all of these are designed to turn the tide of traffic toward your box-office—your lobby.

In addition to presenting an attractive appearance the lobby should contain material affording a direct tie-up with the attraction showing within. The use of posters, cut-outs, and novelties will all help in this regard.

The aspect of the lobby should be pleasing. No unpleasant detail of a picture should be selected as a theme to guide decoration. For instance, although the boy in "Broken Laws" serves a penitentiary sentence, it would not be wise to put up a lobby front in any way reminiscent of a jail entrance, nor would it be good business to attire your ushers as convicts.

However, it is good showmanship to dwell upon the thrilling incidents depicted —such as the automobile episode in "Broken Laws." One idea might be to have a wrecked motor car in your lobby with a card explaining that this is one result of "Broken Laws." A display that will surely attract attention—even though it may be somewhat morbid—would be to secure from the museum or the local police force a number of the various types of handcuffs and other implements used at present and in bygone days for those who have paid the penalties for "Broken Laws."

Another thought might be to make a huge speedometer out of card board and have the hands point to the number of accidents that occurred during thirty days because of "Broken Laws."

These are but suggestions. The point is to remember that your lobby is your last word of salesman-showmanship. It is what makes your patrons "sign on the dotted line" at the box-office

Here's Your SPECIAL EXPLOITATION SECTION

On

Mrs. Wallace Reid

in

"Broken Laws"

Distributed Throughout the World by

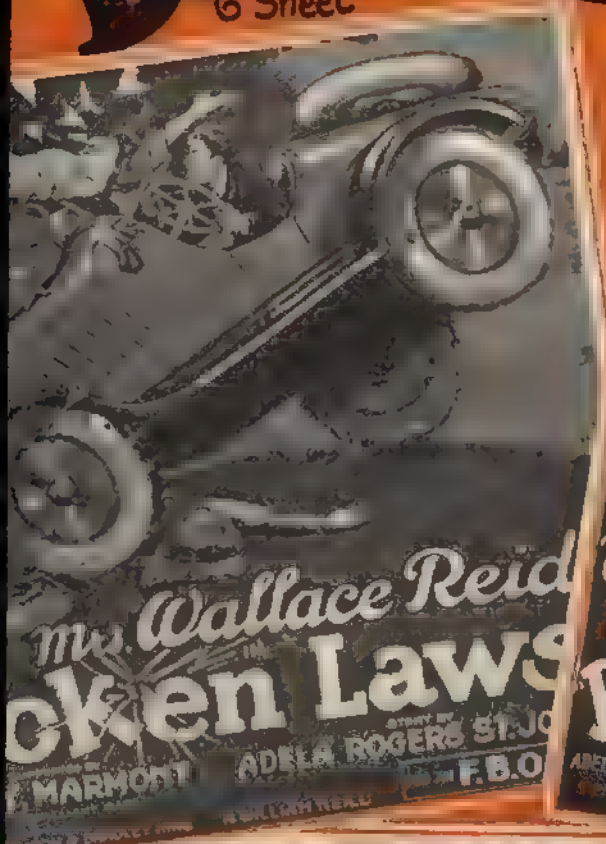
FILM BOOKING OFFICES

723 Seventh Ave., New York City. Exchanges Everywhere.

remarkable Adv. Matter

"Broken Laws"

6 Sheet



3 Sheet

1 Sheet

24 Sheet

Percy Marmont and Jackie Saunders play important roles in F. B O's true-to-life drama "Broken Laws". The picture proves that the children must always suffer for the carelessness of parents as well as for their sins. More than love is necessary in the proper raising of youngsters.

Mrs Wallace Reid, widow of the well beloved player, has the leading part in F B O.'s "Broken Laws." She is the too indulgent mother of a spoiled son, who awakens to her mistakes when it is too late

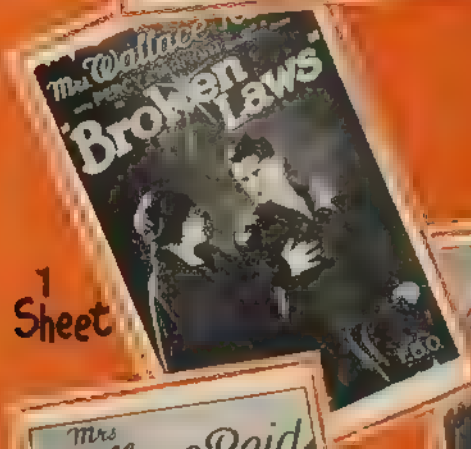
"BROKEN LAWS"

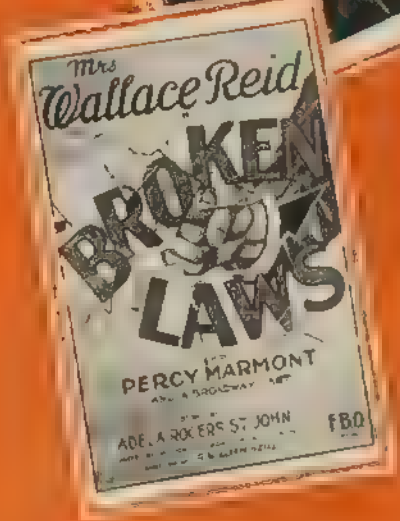
F. B. O.'s "Broken Laws" abounds in situations such as here depicted. The story is brimfull of heart interest coupled with thrills and suspense It also offers exceptional opportunity for real showmanship

There are many beautiful pictures in "Broken Laws" Stills like this one will help make many windows attractive for tie up window displays offered with the F. B. O. film by national advertisers of nationally known products.

F. B. O. Photodrama Has Big Popular Appeal. It Will Develop Exceptional Patronage for Every Type of Theatre

Sensational Posters and
for Mrs. Wallace Reid in

24 Sheet

1 Sheet



1 Sheet

1 Sheet

3 Sheet

late he realizes her inability to distinguish liberty from license. And between these two little "Patsy" Heath receives her start along the street of sorrows.

The Wheel Turns

Conditions change. And grow[illegible] Little by little, Joan Allen's infatuation for her son, loses her husband's love. But she is too fixed in child worship to sense the situation she has created.

Ralph Allen, fearful for the future and disconcerted, seeks elsewhere that measure of happiness which is his. And Jazz with ever ready tentacles entwines him, first romance, then confirmation of [illegible]

You know the rest. It is an ancient story. [illegible] Ralph Allen, spoiled, reckless, disrespecting nothing but his own [illegible]

Jazz Age Love

To make it worse for the boy, his father dies, and at the age of seventeen he is absolutely without any restraining influence. [illegible] and impropriety. Now we meet the girl who is [illegible] stand at the [illegible]

She has developed [illegible] species which has [illegible] rank orchid from the mire of jazz. She is an exotic, convention defying thirty-third degree flapper.

Inevitable Ruin

Madly the youth and girl race through life along the high road to destruction. Without parental supervision they slip along the greased skids toward [illegible]

There are wild parties and liquor and all that follows in its wake. Then comes one fatal night. How many others have ended like it? A racing sedan, bootleg rum, eyes befogged and hand unsteady on the wheel.

Crash! A wrecked car, a youth shaken and shocked into sobriety, and an old woman, a victim of "Broken Laws," crushed to death.

The Law

Then the wheels of Justice. Slowly but inexorably grinding to bits those who defy man-made laws and conventions. The boy is arrested, and for once there is no power that can intervene for him.

[illegible] sequence of the picture to this [illegible] seems enthralling, the scenes now [illegible] rise to heights of heartrending [illegible]

Finally, Bob's poor mother realizes that she alone is responsible for her son's position. She faces the hideous [illegible] but not [illegible] for the boy has proven a most [illegible] curse.

The Verdict

Every agency that may be used to [illegible] prevent the law is enlisted in the [illegible] the most legal talent is [illegible] his side. Powerful influ[illegible] ough to bea[illegible] ct attorney is scathing in [illegible] the counsel for the de[illegible] the judge charges the jury. And the boy's fate is left with them.

Slowly and with a dignity [illegible] of their dignity, the twelve go [illegible] and true one into the [illegible] room. The air is heavy with [illegible] [illegible]

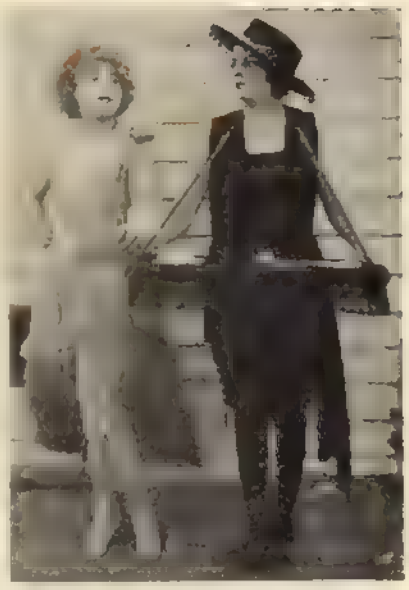
Manslaughter

Guilty of manslaughter as charged! Frantically Joan beseeches the [illegible] for mercy. Vividly she unfolds the story of the events that have led her child to the prison's gates. With soul [illegible] she claims her fruit takes the blame upon herself, [illegible] but to no avail. [illegible] cries of a mother's [illegible] is [illegible] to serve her sen[illegible] The boy is sentenced, and is [illegible] to a [illegible] Home—to wait.

New Life

It has been said that happiness is transient—so is suffering. Bobby emerges from confinement with a new outlook upon life.

This is a good atmosphere still for F. B. O.'s "Broken Laws." It is No. 30 and may be used for tie-up windows on gowns, evening wear, jewels, and silverware.



Still No. 83 will help you secure windows from tobacconists, costumers, modistes, and others for your showing of F. B. O.'s realistic photodrama "Broken Laws."

[illegible] is a general readjustment of affairs. And just before those words "The End" are projected upon the [illegible] and Joan and Patsy [illegible] w. And this time they [illegible] road of understanding that will surely lead to happiness.

Names of Note

To such a story F. B. O. has added names of players that glitter like gold—box office gold. The cast includes an [illegible] gation of histrionic talent such as [illegible] dom assembled. Look it over.

In addition to Mrs. Wallace Reid, as Joan, the ever-popular Percy Marmont contributes a fine characterization as Richard Heath. The part of Ralph Allen is capably cared for by Ramsey Wallace, while Jackie Saunders plays the role of Muriel Heath, the modern mother.

Never have there been more appealing kids than little Pat Moore and Jane Wrey who portray Bobby and Patsy at the age of eight years. And when the children arrive at the flapper stage, the parts are taken by Arthur Rankin and Virginia Lee Corbin.

The Background

The frame of the picture either adds or detracts from the effectiveness of every production. The setting for "Broken Laws" helps the film attain perfection.

The backgrounds are in every case superb. They breathe realism and beauty. Each carries conviction, and will transport your audience from the confines of the theatre, direct to the scene of the action.

You Be the Judge of These National

THE National Tie-Ups on "Broken Laws" have been selected with a view to assisting you in securing windows from merchants in highly diversified lines of business.

The fact that the story stresses the presence of children makes it possible to secure the cooperation of many merchants handling products manufactured for the consumption of young America.

The two types of women portrayed in the photoplay afford the opportunity to tie-up effectively with every sort of article having feminine appeal. And there are many stills of the leading masculine characters that will secure you windows from dealers in men's wear—both "collegiate" and conservative.

Headwear

Stills such as No. 41, 14, 72, 39, 92, 38, and numerous others may be used for window displays of hats and caps. For this purpose the manufacturers of "Society Club" hats and "Sure-Fit" caps will lend their best cooperation.

If there are no merchants in your town who handle these particular brands the stills may be used in local tie-ups with department stores, haberdashers, clothiers, hatters, and all other establishments selling headwear for men and boys.

Razors

There are several stills similar to No. 86, which shows one of the leading characters manipulating a safety razor. Not only will these photographs enable you to tie-up with all merchants selling "Auto-Strop" razors, but you may also secure the cooperation of dealers in shaving brushes, soaps, powders and the various other requisites of a beardless face.

The "Auto-Strop" people will give their assistance by furnishing as many sets of their display material as you can use. And it is a foregone conclusion that both you and the merchants will profit.

You should secure windows from druggists, department stores, and all others who sell articles of this nature.

Milk

The Borden's "Eagle Brand" Milk tie-up is quite logical because of the great value of the product in rearing children. While there is no still specifically showing one of the children in the picture drinking milk, there are a number of human interest kid stills that will answer your purpose.

The rest may be accomplished with the Borden display material, and window cards worded appropriately. For instance, one might contain the thought "Broken Laws" of health in childhood lead to serious consequences later. Or Buy Borden's Milk and See 'Broken Laws.' Both Will Do You Good.

Cosmetics

The prospects for exceptional tie-ups on cosmetics are very bright. If you will glance at stills Nos. 83, 43, 30, 90, 54, 79, 55, 48, 49, 58, 56, 60 and a whole raft more, you will see why.

The many pictures of the little girl offer a fine chance to tie-up with the 'school girl complexion' idea. And the pretty flappers and charming women will also help cosmetic windows.

Some of the pictures that may be used in this regard are distinctly novel. Those showing the children "making up" with the aid of mother's rouge, mascara and powder, are good for a laugh, and will attract attention anywhere.

Here is tie-up material for window displays featuring evening apparel, punch bowls, silverware and housefurnishings. It is No. 42 from F. B. O.'s "Broken Laws."

Still No. 43 from "Broken Laws" the big F. B. O. photodrama, offers a unique opportunity to tie-up with merchants handling cosmetics, powder, perfume, atomizers etc., beside having lots of human interest.

Cheramy, Inc., manufacturers of the nationally advertised "Cappi" products, have special display material which will help you in arranging some wonderfully attractive windows. Just specify your playdates and the amount of display sets required, and you will receive prompt assistance.

Perfumes

The perfume angle is cared for by the National Tie-Up with Fontanis, Inc., whose delicately fragrant products are nationally famous.

Select any of the numerous stills showing beautiful women—and combine them with the Fontanis display material for a window beautifully alluring. Many of the pictures feature perfume, atomizers, and so on, and, of course these are particularly appropriate.

The Fontanis display material is something very special, so do not neglect to secure the cooperation of every merchant in town who sells the product. The same stills may be used for tie-ups of local nature, but because of the assistance vouchsafed by the na-

Beside being a good "atmosphere" still, No. 81, will help in arranging a window display of motor accessories. Four characters in F. B. O.'s "Broken Laws" are shown, played by Mrs. Reid, Percy Marmont, Arthur Rankin and Virginia Lee Corbin.

If you desire to secure the active and hearty cooperation of the police force for your showing it is only necessary to donate the proceeds of one performance, or some certain percentage of your receipts to the Police Fund. In return the bluecoats will sell tickets for your show—and they are the best ticket sellers in the world!

ONE idea might be a duplicate summons, summonsing citizens to your theatre because of "Broken Laws" and fining them the price of admission.

Another might be a subpoena calling upon all law abiding citizens to visit your theatre to witness "Broken Laws."

And then there is the old stunt of affixing fake "tickets" to parked motor cars. Any idea a bit out the ordinary will attract attention and patronage to your theatre.

Any sort of parade will "line them up" at the curb, and as there is an automobile accident in the picture you have an excuse to line up the automobile club, and all car owners and agents in a motor car parade for the observance of speed laws and careful driving.

The cooperation of Mothers' Clubs, Parents' Associations, schools, and similar organizations having to do with child welfare may be secured to assist in publicizing your showing. After all, the rearing of children is a serious matter—as is well shown in "Broken Laws."

TEASER ads, throwaways, and similar paper may be made to carry your theatre's message in a "different" way. Just as an idea, an ad reading something about: "Five Hundred Citizens of Smithtown Wanted for Broken Laws," will start comment and conversation which will get folks headed for your lobby.

Another movement which you may organize will bring you the thanks of the entire community. Get the cooperation of the school teachers and the boy scout officials in starting an association of older children who are pledged to take care of the younger kids out side of school hours. The idea is in line with the proper rearing of children by starting them along the right road, thus avoiding "Broken Laws" later in life.

IN addition to other accessories F. B. O. has originated some small standing cut-outs showing "necking parties" in motor cars. These may be used in window displays, on cigar stands, cashiers' counters, and any number of places. They are well done and will attract attention and favorable comment.

There are dozens of ideas that will boost business for you. For instance there are any number of stills showing Mrs. Wallace Reid, Percy Marmont and the others registering various emotions. A display of stills of this nature together with an offer of prizes—tickets—for the best letters stating what the actors may be registering is one thought that will get attention.

The mixed letter idea will also attract patronage to your theatre. Offer prizes of passes for those who can arrange the letters contained in the words "Broken Laws" in the manner necessary to spell the title of the attraction. Another interesting contest would be one to ascertain how many different words can be made from the letters contained in the picture's title.

In offering prizes of passes remember to always give single admissions only. Each single pass you issue is sure to bring one or more cash customers back with it.

ANOTHER idea in which the merchants of the town will assist is that of converting your lobby into a sort of arcade. Have the shops which work with you on the window displays and split-a-page advertisements show some of their merchandise in the lobby. Attractive displays may be made, your lobby beautified and made more alluring, and the cooperation will result in additional business for the merchants.

The inauguration of a "Better Window Week" will meet with the hearty approval of the merchants, and it is possible to secure the cooperation of the city authorities on this one.

Mrs. Wallace Reid and Ramsey Wallace are shown in still No. 19 from F. B. O.'s "Broken Laws." The picture may be used in displays of interior furnishings, tableware, glassware, linen, ornaments, furniture and clothing for either men or women.

These Suggestions Will Build Business For Your Showing of F. B. O.'s 'Broken Laws'

In Addition to Advertising Your Attraction Through Window Displays,
Here Are Other Mediums of Exploitation That Will Help You to a Big Gross

IN some productions there is one particular angle through which the attraction may be publicized, but with F. B. O.'s "Broken Laws" every exploitation element is one hundred per cent present.

There is a crackerjack title, an excellent cast, a fine story. And wise showmen will make every one of these attributes do its bit for exceptionally heavy box-office intake.

Your income from an attraction may be measured exactly by the amount of exploitation you attach to your showing of the film. If you tell the town in no uncertain tones what entertainment you are offering, the town will respond gladly. But if you are lukewarm—your potential patronage will be so too.

One of the best publicity mediums in advertising motion pictures is the daily press. Not the direct advertising announcing the picture showing at your theatre—but the indirect advertising that you may secure on the reading pages through stunts and contests.

FOR your showing of F. B O.'s "Broken Laws," cooperate with your local newspaper in staging contests for letters and essays from readers. And also arrange for a series of articles which will have direct bearing on your picture and give it indirect advertising.

For instance, the boy in the picture finally goes to prison mainly because of the lax manner in which he has been brought up. How many cases in real life are almost identical? A newspaper story entitled "Are Parents to Blame", "Broken Laws of Childhood," "Mothers to Blame for Broken Laws," or any similar head will surely be read by your potential patrons. The picture may be mentioned casually, and the title featured as boldly as possible. The story will remain in the mind of the public, and the title will recur to them when they see your other ads.

Other articles might be a series on bringing up children, and a very interesting group of stories may be written around the title "Consequences of Broken Laws."

A humorous, and also interesting angle would be to write an article showing how each of us breaks some law each day—almost each hour. Of course, these laws are not the big, important ones, but the little ones that are neglected, forgotten or never enforced. Another slant would be to write of the things that are legal in one state, and illegal in another.

Still No. 38 from F. B. O.'s picture "Broken Laws" may be used for displays in connection with house furnishings, dresses, and men's apparel. The players appearing in the scene are the popular stars, Mrs. Wallace Reid and Percy Marmont.

THE newspaper boys will be only too glad to cooperate with you along the lines mentioned, for they are increasing circulation for their paper as well as patronage for your theatre

Another important medium of publicity may be enlisted in your behalf on this particular picture. It is the pulpit.

THE church is always a force for good, and ministers, since the beginning, have been preaching against the breaking of the laws. There could scarcely be a finer title for a sermon than that offered by your attraction "Broken Laws, and you should experience no difficulty whatever in securing church cooperation.

The chance offered for a split-a-page cooperative ad including your theatre and many of the town's merchants is too good to be overlooked. There may be "Broken Laws" of health, of success, of entiquette, of happiness, of life itself. And there is not a merchant who cannot increase business for himself by coming in on this idea.

Remember that in this page, or double-truck advertising—every participant receives the same publicity that would accrue to an individual ad of the same size. And the cost is a mere trivial fraction of what it would ordinarily be

Get after the merchants on this one. The newspaper will help. And make sure that every ad carries the words "Broken Laws" in some connection

The bigger the tie-up the better the exploitation. So beside working with the churches, the newspapers and the merchants of your city, secure the cooperation of the city itself. This, of course, must be done through the municipal authorities. You may inaugurate a "Broken Laws of Health" week with the cooperation of the Health Department; you may secure police co-operation for a week during which every citizen will observe the traffic rules and regulations—and so on through almost every department of the civic government.

NATIONAL Tie-Up SECTION

'Broken Laws' Means Broken Box-Office Records

Thrilling F. B. O. Photodrama Starring Mrs. Wallace Reid Will Bring Throngs to All Theatres

As a tragic indictment of the great joss jazz, "Broken Laws" will enthrall the men and women of America. And, it is to be hoped, the younger generation will heed the warning pointed in a flaming finger.

It has been said that motion pictures are the hope of the world. And if there is one medium through which our time may be emancipated from the soul strangling grip of maddened syncopation—it is provided by the screen.

In "Broken Laws" F. B. O. offers a great, dramatic picture. One whose story depicts a cross section of life as it exists, not only in the clash and clang of the metropolis, but in every hamlet where family sanctity has been disrupted by the insidious institution—Jazz!

The Star

It is, perhaps significant that Mrs. Wallace Reid, [illegible] tered [illegible] keeping pace with the modern maelstrom, has been selected for the stellar role in the film.

She brings to her characterization a heart full of understanding, and her histronic effectiveness in this drama far eclipses her best previous efforts.

Her part is that of the indulgent mother, whose very kindness almost kills the child upon whom she lavishes her blind love.

In the early sequences of the picture we see lawless manhood in the making. We are introduced into the household of Ralph Allen. He is a common-sense sort of chap, utterly wrapped up in his beautiful wife, Joan, and their eight year old son, Bobby.

There is but one rift in the lute of their marital happiness. It is a difference regarding the rearing and character molding of the one both hold so dear.

'Spare the Rod'

Joan Allen refuses to see in her son anything but a being combining all the virtues—an earthly angel devoid of fault. And with her his word—his lightest whim—is law.

Never has Bobby known a parental reprimand, never has he experienced the warmth caused by the well-placed application of a slipper. Rules of conduct have no place in his scheme of things.

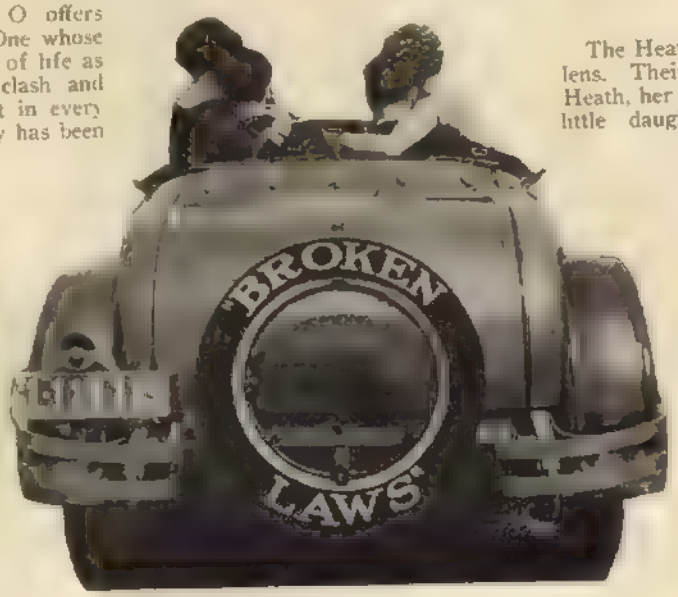
Ralph Allen, his father, recalling the beneficial effects of wood-shed visits in his own boyhood, views the situation with much misgiving. He visualizes the result of this over-indulgence on plastic-minded youth. Gently he remonstrates—but without avail. His attempts at correction, precipitate unpleasant scenes. And so things drift.

Next Door

The Heaths are neighbors of the Allens. Their family consists of Muriel Heath, her husband Richard, and their little daughter nicknamed "Patsy."

These three form another type of family triangle. Muriel, beautifully charming, but utterly frivolous, is a true product of the age. She is no stranger to any of the forbidden fruits. She plays at love with many men, toys with "the cup that cheers," prefers a special brand of cigarettes and is quite familiar with how to draw to her hand in a stiff poker game.

"Dick" her husband, is the sort of chap who will make any sacrifice for domestic peace. Engrossed in his home and his library, he permits his wife full freedom. All too



This is a card stand that will help publicize your showing of F. B. O.'s "Broken Laws." It also shows one way in which you may have the taxis and motor-cars of your town help sell tickets for your attraction.

IRON BLOCK PLANES

BAILEY, ADJUSTABLE

No. 15

No. 9½

Japanned cap, brass adjusting screw, polished bottom and sides.

No. 15—7 inches long, 1⅝ inch cutter. Each...$3.30
Weight, each, 1⅝ pounds.

No. 9½—6 inches long, 1⅝ inch cutter. Each... 3.15
Weight, each, 1⅛ pounds.

STANLEY, LOW ANGLE

In the low angle planes the cutter rests on its seat at an angle of only 12°. They are made with the same careful attention to detail as distinguishes the "Bailey" Block Planes, both as regards to workmanship and material. All except No. 61 have adjustable throat.

Nos. 65 to 65½

Nos. 61 and 63

Japanned Inside, Polished Outside.
With Nickel Plated Cap and Trimmings.

No. 65—7 inches long, 1⅝ inch cutter. Each....$4.45

With Japanned Cap and Trimmings.

No. 60½—6 inches long, 1⅝ inch cutter. Each..$3.25
No. 65½—7 inches long, 1⅝ inch cutter. Each.. 3.55

Non-adjustable Throat.

No. 61—6 inches long, 1⅝ inch cutter. Each....$3.15
Average weight, each, 1⅝ pounds.
All above, one in a box.

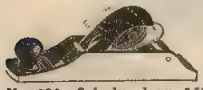
STANLEY, ADJUSTABLE

Double End.

Cast iron body, best quality English cast steel cutter. Perfectly tempered, polished and sharpened. The throat can be quickly opened or closed for coarse or fine work.

By reversing the cutter seat and placing the cap and cutter in the end slot, it can be used as a bull nose plane to work into corners, etc.

No. 131—8 in. long, 1⅝-in. cutter; japanned trimmings, polished adjusting wheel, rosewood knob. Each...$3.80
Weight, each, 1⅛ pounds.



A movable cutter seat. The cap and cutter can be removed and the seat reversed and used as a bull nose plane for corners, etc.

No. 130—8 inches long, 1⅝-inch cutter; polished bottom and sides; cap and inside japanned; hardwood knob. Each $1.95
Weight, each, 1⅝ pounds.

No. 220

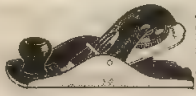
No. 103

No. 220—7½ inches long, 1⅝-inch cutter; screw adjustment; polished bottom and sides; japanned cap and inside; rosewood knob. Each.....$2.30

Made for Light Work.

No. 103—5½ inches long, 1⅝-inch cutter; lever adjustment; japanned frame and cap. Each.....$1.75
Weight, each, 1½ pounds.

STANLEY, NON-ADJUSTABLE



for all kinds of ordinary work requiring the use of a block plane, they are excellent tools. Cast iron body, best quality English steel cutter, perfectly tempered, polished and sharpened.

No. 110—7½ inches long, 1⅝ inch cutter; polished bottom and sides; cap and inside japanned; hardwood knob. Weight, 1⅝ pounds. Each $1.75

No. 100

No. 102

No. 101

No. 100—3½ inches long, 1-inch cutter; handled; polished bottom, japanned frame and cap. Weight, ⅜ pound. Each $0.75

No. 102—5½ inches long, 1⅜-inch cutter; polished bottom; japanned frame and cap. Wt., ⅝ lb. Each $1.15
One in a box.

No. 101—3½ inches long, 1-inch cutter; polished bottom; japanned frame and cap. Wt., ¼ lb. Each $0.60
Six in a box.

STANLEY, SPECIAL BLOCK

Combination Rabbet and Block.

Bull Nose Rabbet.

Cast iron body, best quality English cast steel cutter perfectly tempered, polished and sharpened.

Will be found very useful for working close up into corners or other difficult places. The mouth can be adjusted for different widths by means of the set screw on top of the plane. Top is japanned, bottom is polished.

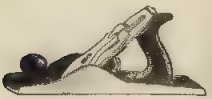
No. 75—Length, 4 inches; 1-inch cutter. Weight, ⅝ pound. Each $1.00
One in a box.

BAILEY, ADJUSTABLE IRON

Best quality English cast steel cutter, of equal thickness throughout; tempered, ground and honed ready for use; steel plane iron cap; japanned cast iron body; thoroughly seasoned rosewood handle and knob; brass adjusting screw. Parts interchangeable.

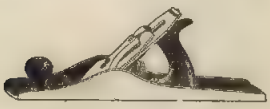
Smooth.

Nos.	1	2	3	4	4½
Length, inches	5½	7	8	9	10
Cutter, inches	1¼	1⅝	1¾	2	2⅜
Weight, lbs.	1¼	2¼	3⅛	3¾	4⅝
Each	$4.10	$5.25	$5.90	$6.04	$6.90



Jack.

Nos.	5	5½
Length, in.	14	16
Cutter, in.	2	2¼
Wt., lbs.	4¾	6¾
Each	$6.90	$7.80



Fore and Jointer.

Nos.	6	7	8
Style	Fore	Jointer	Jointer
Length, inches	18	22	24
Cutter, inches	2⅜	2⅜	2⅜
Weight, lbs.	7¾	8⅛	9⅜
Each	$8.90	10.20	12.10

Corrugated Bottom.

The corrugated bottom creates very little friction and makes an easier running plane than the smooth bottom.

Nos.	3C	4C	4½C	5C
Style of plane	Smooth	Smooth	Smooth	Jack
Length, inches	8	9	10	14
Each	$5.90	6.45	7.45	7.45

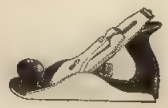
Nos.	5½C	6C	7C	8C
Style of plane	Jack	Fore	Jointer	Jointer
Length, inches	15	18	22	24
Each	$7.85	9.55	10.95	13.05

All above, one in a box.

STANLEY, BED ROCK

This plane, owing to its solidity and variety of adjustments, surpasses all others for fine work on all woods. The cutter, frog and bottom are so designed, machined and fitted that they are practically one solid piece of metal, thus preventing any chance of vibration. Frog is adjustable either forward or backward. The cutter is the regular "Bailey" cutter and is adjustable both endwise and sidewise; well-seasoned rosewood handles and knobs.

Nos. 602 & 603

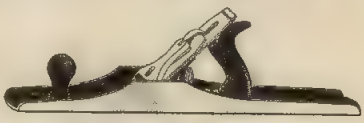


Nos. 604 & 604½

Smooth.

Smooth or Corrugated Bottom.

Smooth, Nos.	602	603	604	604½
Corrugated, Nos.		603C	604C	604½C
Length, in.	7	8	9	10
Cutter, in.	1⅝	1¾	2	2⅜
Wt., each, lbs.	2¼	3¼	3⅝	4⅝
Each	$6.75	6.25	6.75	7.29

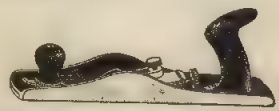


Smooth or Corrugated Bottom.

Smooth, Nos.	605	605½	606	607	608
Corrugated, Nos.	605C	605½C	606C		
Style	Jack	Jack	Fore	Jointer	Jointer
Length, in.	14	15	18	22	24
Cutter, in.	2	2¼	2⅜	2⅜	2⅜
Wt., each, lbs.	4½	6½	7¾	8¾	9¾
Each	$7.80	8.45	9.85	11.35	13.40

STANLEY, LOW ANGLE JACK

Cutter is set at 12° angle. Especially adapted to cutting across the grain in heavy work where more than ordinary power is required. Has patent adjustable throat. Cast iron body, best quality English cast steel cutter; rosewood handle and knob.



No. 62—Length, 14 inches; 2-inch cutter; japanned center, polished sides. Weight, 3⅝ pounds. Each....$7.70

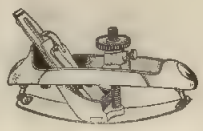
All above, one in a box.

CIRCULAR

These planes have flexible steel faces, which can be accurately adjusted for planing the inside or outside of circles. The cutters are the same and have the same adjustments as the "Bailey" and "Bed Rock" planes.

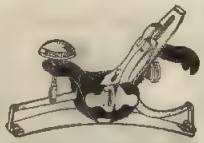
Victor Adjustable.

Adjusted by a screw at the center. Constructed to give great strength and accuracy.



No. 20—10 inches long, 1⅝-inch cutter; nickel plated; weight, 4 pounds. Each $11.30

No. 113—Concave Position.



No. 113—Convex Position.

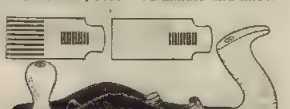
Stanley Adjustable.

The face is fastened at its center to the plane body and adjusted at the ends by means of a screw and levers. A valuable feature is the graduated scale for setting the face.

No. 113—10 inches long, 1⅝-inch cutter; japanned. Weight, 3 ½ pounds. Each.....$10.20

BUTCHERS' BLOCK

Designed especially for truing up or resurfacing butchers' blocks. One special cutter and one regular plane iron is furnished. Special cutter is for fast cutting or rough work, while regular iron is used to finish smooth the final surface of a block. Cast iron body, best quality English steel cutters, rosewood handle and knob.



No. 64—Length, 12½ inches, 2-inch cutters; japanned finish. Weight, each, 4 pounds. Each.....$6.40

CARRIAGE MAKERS' RABBET

These planes are especially adapted for the heavy framing required in mining work for carriage or wagon building, or in any work of similar nature.

Cast iron body, best quality English cast steel cutters, rosewood handles and knobs.

The handle and knob on Plane No. 10¼ can be turned to either side, thus allowing ample room for the workman's hands when working close up to perpendicular sides of any height.

It is also fitted with spurs on each side, so that it will rabbet across the grain equally as well as with it.

No. 10¼—Smooth bottom, 13 inches long, 2⅛-inch cutter. Weight 4¼ pounds. Each..$10.35

No. 10¼C—Corrugated bottom, 13 inches long, 2⅛-inch cutter. Weight, 4¼ lbs. Each..$10.35

This plane is similar to No. 10¼, but does not have side spurs or adjustable handle and knob.

Nos.	10½	10
Full length, inches	9	13
Width of cutter, inches	2⅛	2⅛
Weight, each, lbs.	3½	4½
Each	$7.30	$7.50

IRON DADO

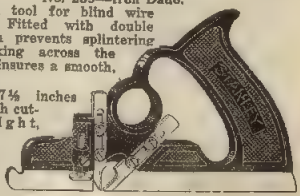
Illustrating both front and rear view.

No. 39—Japanned iron stock and handle, polished face and edge. Length, 8 inches; equipped with depth gauge and two adjustable spurs. The cutter is set in the plane askew.

Cutter, Inches	⅜	½	¾	⅝
Weight, lbs.	1¾	1¾	1⅝	2
Each	$4.00	$4.20	$4.50	$4.80
Cutter, Inches	⅝	⅞	1	
Weight, lbs.	2	2¼	2¼	
Each	$4.90	$5.20	$8.80	

No. 239—Iron Dado.

An ideal tool for blind wire grooving. Fitted with double spur, which prevents splintering when working across the grain, and insures a smooth, clean cut.



No. 239—7½ inches long, ⅛-inch cutter. Weight, each, 1 pound. Each $5.85

All above, one in a box

IRON RABBET

This plane will lie perfectly flat on either side, and can be used with right or left hand equally well while planing corners or up against perpendicular surfaces. Fitted with a spur which permits them to be used for working across grain; also fitted with a detachable depth gauge. Japanned iron stock and handle, polish face and edge.

Nos.	190	191	101
Size cutter, inches.....	1⅛	1¼	1
Weight, each, lbs.....	2½	2¼	2
Each	$4.00	$3.80	$3.55

DUPLEX, FILLETSTER AND RABBET

No 78

This plane has two seats for the cutter, one for regular work and the other where a bull nose is required. It has a spur and removable depth gauge. The adjustable fence can be used on either side and slides under the bottom, regulating the width of cut.

To work same as a rabbet plane, remove fence and arms.

No. 78—8½ inches long, 1½-inch cutter; japanned Weight, each, 3 pounds. Each.....$4.50

PLOW, BEADING AND MATCHING

No 50

This is a very handy tool for light work. It consists of a main stock carrying a spur and a depth gauge and forming a support for one side of cutter; a sliding section carrying a spur and forming a support for the outside of the cutter and a fence with a 5 inch adjustment. The cutters comprise 7 Plow and Dado Bits, ¼, 5/16, ⅜, 7/16, ½, ⅝ and ⅞ in., 7 beading tools, ⅛, 3/16, ¼, 5/16, ⅜, 7/16 and ½ inch, and a ¼ inch tonguing tool.

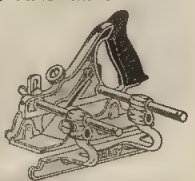
No. 50—9¼ inches long, nickel plated, 15 cutters. Weight, 3½ pounds. Each.....$10.50

PLOW, DADO, FILLETSTER AND

Skew cutters are the feature of this plane. It consists of a main stock carrying a spur, a depth gauge, and a slitting cutter, a sliding section carrying a spur and forming an extra sole for the plane, and a fence which can be set for either plow or filletster work. This tool is accompanied by eight Plow and Dado bits (1/16, ¼, 5/16, ⅜, ½, ⅝, ⅞ and 1¼ inch), a 1½ in. Filletster Cutter, a Slitting Cutter and ¼ inch Tonguing Tool. All except the slitting blade are secured in the main stock on a skew.

No. 46—Iron stock and fence; nickel plated; rosewood handle, knob and face; 10½ inches long; with eleven tools. Weight, 5¾ pounds. Each.....$12.50

BULL NOSE PLOW AND MATCHING



Has two interchangeable front parts that make it either an ordinary plow or a bull nose plow. With the bull nose attachment the cutter will easily work up to and into a ½ in. hole or any larger size, as in sash fitting, stair work, etc. It consists of a main stock, carrying a spur, depth gauge, and slitting cutter. Iron stock and fence, nickel plated, rosewood handle. The cutters comprise eight Plow Bits (⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½ and ⅝ in.), a ¼ inch Tonguing Tool, and a Slitting Cutter. Iron Stock and Fence, nickel plated; rosewood handle.

No. 143—9¼ inches long; 10 cutters. Weight, 4¾ pounds. Each $10.20

All above, one in a box.

MATCHING

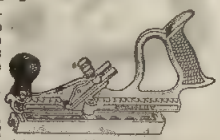
These planes cut a tongue on the edge of one board to fit a groove in the edge of another board, so that when put together the surfaces of the boards come true.

Double End.

Double-End Match Plane, provided with both tongue and groove irons. With one side a tongue can be cut, and by reversing ends, the plane will cut a groove to fit. The tonguing tools are made wider on one side for use on thicker stuff than the plane will tongue and groove in the center.

No. 148—Nickel plated; matches ⅞-inch boards, cuts groove ¼ inch. Weight, 2⅝ pounds. Each.....$6.20

Swinging Fence.



This Plane has two separate Cutters, a suitable distance apart. When the guide is set, both Cutters work and a tongue can be made.

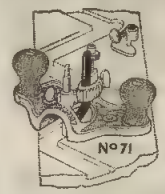
The fence is hung on a pivot, and can be swung around end for end. This movement covers one of the Cutters, and also furnishes a guide for grooving a match for the tongue. Iron stock and fence, nickel plated, rosewood knobs.

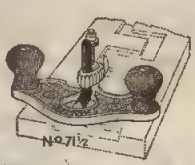
No. 48—Cuts ⅛-inch groove on boards ⅝-inch to 1¼-inch, centers on ⅞ inch. Weight, 3¾ lbs. Each..$7.80

No. 49—Cuts ⅛-inch groove on boards ½-inch to ⅝-inch, centers on ½-inch. Weight, 2⅝ lbs. Each..$7.30

ROUTER

This Tool should be added to the kit of every skilled Carpenter, Cabinetmaker, Stair Builder, Patternmaker or Wheelwright. It is perfectly adapted to smooth the bottom of Grooves, Panels or all depressions below the general surface of any woodwork. The Bits can be clamped to the back side of the upright post, and outside of the stock. In this position they will plane into corners, or will smooth surfaces not easily reached with any other tool. Nickel Plated Steel Stocks, 2 Bits, sizes ¼ and ½ inch. Plain beech handle, length 7¼ inches.





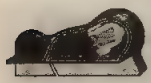
Open Throat.

No. 71—Allows shaving to clear readily; 1¾-inch opening, ⅛-inch bit shank. Weight, 2⅝ lbs. Each..$5.60

No. 71½—Size of opening, 2x1⅝ inches. Weight, 2¼ lbs. Each $4.40

All above, one in a box.

SIDE RABBET



Illustrating rear view.

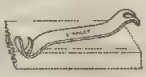
Illustrating front view.

Designed especially for trimming or smoothing the ends of boards, such as sidings, etc., for a square or close fit. It has a right-angle rest or guide from the cutter edge, and the cutter works on a skew, giving an easy shaving cut. In the rest or guide are two screw holes to which wood blocks of various bevels may be attached, enabling the user to make a slanting cut.

No. 95—6 inches long, ⅝-inch cutter, japanned. Weight, 1¼ pounds. Each $2.50

CORNERING TOOLS

For carpenters and wood-workers' use in rounding sharp corners, different size cutter at each end, no depth gauge required.



No. 28—5¾ x ⅝ inch, flat steel, ⅛ and ¼-inch cutters. Weight, dozen, 1½ pounds. Per dozen..... $5.60

VENEER SCRAPERS

No 12

Double Handle.

This tool takes the same cutters as Scraper Plane No. 112. For many kinds of work its peculiar form is of great advantage.

No. 12—Adjustable veneer scraper, 3-inch cast steel cutters, japanned iron face, brass adjusting screws. Weight, 3¾ pounds. Each $6.85

Single Handle.

The blades are adjustable endwise, and for angle, and can be firmly locked in position desired. It can also be used as a toothing plane, doing excellent work in scraping off old paint or glue, and in roughing up the surface of wood preparatory to veneering same.

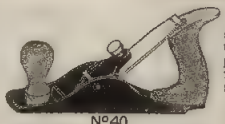
No 112

No. 112—Scraper, 9 inches long, 3-inch cutter; japanned inside, polished bottom and sides; brass adjusting screw, rosewod handle and knob. Weight, 4 lbs. Each..$5.35

Extra cutters for veneer scraping. Each..... .20

Extra cutters for toothing, Nos. 22, 28, 32 (22, 28 or 32 teeth per inch), each..... .30

SCRUB



No 40

This tool has a heavy single iron with the cutting edge rounded and is practically adapted for roughing down work before using a jack plane; japanned iron stock; beech handle and knob.

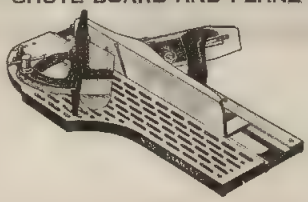
No. 40—9½ inches long, 1⅛-inch cutter; japanned. Weight, 2½ pounds. Each $3.00

CHAMFER

The front section of Plane No. 72 is movable up and down. It can be firmly secured to the rear section at any desired point by means of a thumb screw. Without the use of any other tool, this plane will do perfect chamfer, or stop chamfer work of all ordinary widths. When the two are clamped together so as to form an even base line, the tool can be used as an ordinary bench plane.

No. 72—Stanley's patent chamfer plane, 9 inches long, 1⅝-inch cast steel cutter; japanned; rosewood handle and knob. Weight, 3⅝ pounds. Each..... $5.90

CHUTE BOARD AND PLANE



Stanley's chute board, sometimes called a jack board, is very important for all wood-workers, especially pattern and cabinet makers. The board is made of cast iron, of ribbed construction and has an adjustable runway for the plane. The swivel is indexed for cutting a square and a mitre, but can be fastened with the clamping screw at any desired angle between zero and 90°. The plane iron being fitted with a lateral adjustment, a cut giving any ordinary draft to a pattern can be made. The sliding back and clamp will support and hold any shaped work in position close to the plane and prevent splintering. The plane is especially constructed to fit the board, and the iron is set on a skew, making a smooth, keen cut.

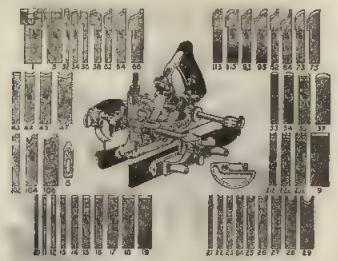
‡**No. 52**—Japanned; 22 inches long, 9 inches wide, frame 15 inches long, 2⅜-inch cutter. Weight, 17½ pounds. Each $27.00

Items marked thus ‡, **not carried in stock. Shipped** direct from factory.

COMBINATION NO. 55

A Planing Mill Within Itself.

This tool, in addition to being a beading and center beading plane, a plow, dado, rabbet filletster and match plane, a sash plane and splitting plane, is also a superior moulding plane, and will accommodate cutters of almost any shape and size.



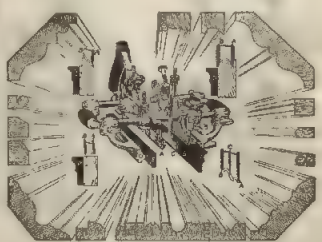
All metal parts of the plane are nickel plated. The handles and fences are made of selected rosewood and every part is well finished.

No. 55—Stanley "Fifty-five" plane is but 10 inches long, with 52 cutters. It will do a greater variety of work than can be done with a full line of so-called fancy planes. A further line of 41 special cutters is regularly made to be used with this plane, which makes its scope of usefulness practically unlimited. Total weight with the extra cutters, 15¼ pounds, replacing a full line of 93 fancy planes weighing about 90 pounds. Price of plane with 52 cutters.....$37.85

All above, one in a box.

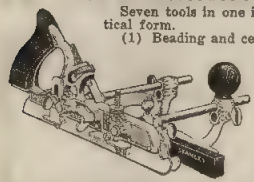
The following cutters are furnished with each No. 55 plane:

No.	Size, Inches	Style	Each
1	1⅛	Sash Tool	$1.00
5	⅛	Match Tool	1.00
8		Slitting Tool	.50
9		Filletster	.50
10	3/16	Plow and Dado Tool	.30
11	3-16	"	.30
12	¼	"	.30
13	5-16	"	.30
14	⅜	"	.40
15	7-16	"	.40
16	½	"	.50
17	⅝	"	.40
18	¾	"	.40
19	⅞	"	.50
21	3/16	Beading Tool	.30
22	3-16	"	.30
23	¼	"	.30
24	5-16	"	.40
25	⅜	"	.40
26	7-16	"	.50
27	½	"	.50
28	⅝	"	.60
29	¾	"	.60
32	¼	Flating Tool	.60
34	⅜	"	.60
36	½	"	.60
38	¾	"	.60
43	⅛	Hollow	.40
44	⅜	"	.40
45	¾	"	.40
47	1	"	.40
53	⅛	Round	.40
54	⅜	"	.40
55	¾	"	.40
57	1	"	.40
62	⅛	Quarter Hollow	.90
64	¾	"	1.00
73	⅜	Quarter Round	.95
75	¾	"	1.00
82	⅛	Reverse Ogee	.90
84	¾	"	1.00
86	1	"	1.00
93	¾	Roman Ogee	.90
95	⅜	"	1.00
102	⅛	Grecian Ogee	.90
104	⅜	"	1.00
106	1	"	1.00
113	⅜	¼ Round with Bead	.90
115	⅜	"	1.00
212	¼	Reeding Tool 2 Beads	.40
222	3-16	"	.40
232	⅜	Double	.40



The samples of work illustrated show some of the mouldings that can be made with cutters regularly furnished with No. 55 plane.

COMBINATION NO. 45



Seven tools in one in compact and practical form.

(1) Beading and center beading plane.
(2) Plow.
(3) Dado.
(4) Rabbet and filletster.
(5) Match plane.
(6) Sash plane.
(7) Slitting plane.

In each of its several forms this plane will do perfect work, even in the hands of an ordinary mechanic, its simplicity of construction and adaptation of parts (as described in the directions which accompany each tool) being easily understood. The plane is fitted with spurs for use across the grain, etc., and can be used either right or left hand. All metal parts are nickel plated. The handle, knob and fence are made of selected rosewood.

No. 45—Stanley "Forty-Five" plane is 10 inches long, with 21 cutters. A further line of 24 cutters are regularly made to be used with this plane. Weight, 9½ lbs. **Each** $20.80

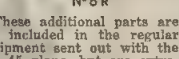
One in a box.

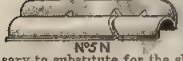
The following cutters are furnished with each No. 45 plane:

No.	Size, Inches	Style	Each
1	1⅛	Sash Tool	$1.00
5	¼	Match Tool	1.00
8		Slitting Tool	.80
9	1¼	Filletster	.50
10	⅛	Plow and Dado Tool	.80
11	3-16	"	.80
12	⅛	"	.80
13	5-16	"	.80
14	⅜	"	.40
15	7-16	"	.40
16	½	"	.40
17	⅝	"	.40
18	¾	"	.40
19	⅞	"	.80
21	⅛	Beading Tool	.80
22	3-16	"	.80
23	¼	"	.80
24	5-16	"	.40
25	⅜	"	.40
26	7-16	"	.80
27	½	"	.80

For illustrations, see cutters for No. 45 plane of same numbers.

Special Bottoms for "Forty-Five" Plane





These additional parts are not included in the regular equipment sent out with the No. 45 plane, but are extra. In order to work hollows and rounds, or a nosing cutter in the No. 45 plane, it is necessary to substitute for the sliding section, specially formed bottoms which are called by the same name as the cutters they are designed to carry, that is: hollows, rounds or nosing tools.

No. 6—Hollow and round, ⅛-inch cutters, work ⅜-inch circle. Per pair.....$1.40

No. 8—Hollow and round, ⅜-inch cutters, work 1-inch circle. Per pair.....$1.40

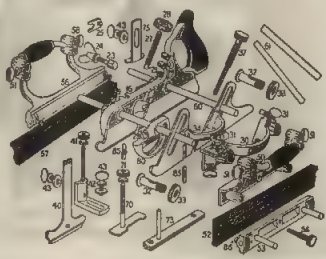
No. 10—Hollow and round, ¾-inch cutters, work 1¼-inch circle. Per pair.....$1.50

No. 5—Nosing tool, 1¼-inch cutters, work 1¼-inch circle. Each $2.50

Average weight per pair, hollows and rounds, 1⅝ lbs.

PARTS FOR PLANES

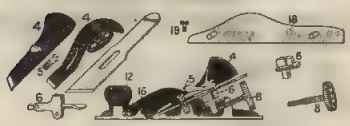
‡ Stanley Combination.



No. of Plane	43	44	50	55
1—Cutter, per set	$7.00	$4.00	$3.50	$12.00
18—Main stock, each	5.00	5.00	2.50	6.00
23—Cutter bolt, each	.30	.30	.30	.30
24—Cutter bolt wing nut, each	.50	.30	.30	.30
25—Cutter bolt clip and screw, each	.10	.10	...	.10
27—Cutter bolt adj. screw, each	.20	...	...	.20
28—Cutter bolt adj. wheel, each	.20	...	...	.20
30—Sliding section, each	3.00	3.00	.80	1.50
32—Thimble, each	...	...	...	.30
33—Thimble check nut, each	...	...	...	.30
34—Adj. bottom, each	...	...	...	2.50
37—Adj. bottom screw, each	...	...	...	.40
40—Center bottom, each	...	...	...	.60
42—Angle iron and screw, each	...	...	...	.60
50—Left fence, each	1.50	1.50	1.50	2.70
52—Tilting guard plate, each	...	...	...	.40
53—Tilting iron with swivel, each	...	...	...	.80
54—Left fence adj. screw, each	...	...	...	.40
56—Right fence, each	...	...	...	2.00
57—Right fence tilt. plate, each	...	...	...	.40
60—Long arms, pair	1.00	1.00	1.00	1.00
61—Short arms, pair	.50	.50	...	.50
70—Adj. depth gauge, each	.40	.40	.40	.40
73—Adj. beading stop, each	.40	...	...	.80
75—Slitting cutter stop, each	.20	.20	.20	.20
80—Cam stop, each	.80	...	...	.80
85—Spurs with screw, each	.10	.10	.10	.10

Items marked thus ‡ not carried in stock. Shipped direct from factory.

STANLEY BLOCK PLANES



No.	Name of Parts.	No. of Plane 100-101	102-103	110	120
‡ 1	Single plane iron, each	$0.18	$0.20	$0.32	$0.42
4	Lever cap, each	.10	.20	.20	.20
‡ 5	Lever cap screw, each	...	...	...	...
‡ 6	Frog complete, each	...	...	...	.30
‡ 8	Adjusting nut, each	...	...	...	...
‡12	Plane knob, each	...	...	.20	.20
‡16	Plane bottom, each	.20	.40	.50	.60
‡18	Detachable sides, each	...	...	...	...
‡19	Side screw, each	...	...	...	...

No.	Name of Parts.	130	131	140	203	220
‡ 1	Single plane iron, each	$0.32	$0.42	$0.50	$0.42	$0.42
4	Lever cap, each	.20	.20	.20	.20	.20
‡ 5	Lever cap screw, each	...	.10	.10	.10	.10
‡ 6	Frog complete, each	...	.30	.20	.20	.20
‡ 8	Adjusting nut, each	...	.20	.20	.20	.20
‡12	Plane knob, each	.20	.30	.30	.30	.30
‡16	Plane bottom, each	.70	1.40	1.50	.60	.60
‡18	Detachable sides, each	...	...	.50	...	...
‡19	Side screw, each	...	...	.25	...	...

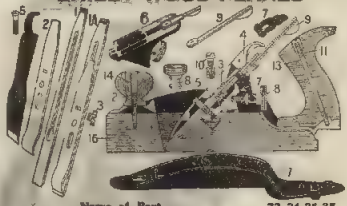
BAILEY AND STANLEY BLOCK

No.		9½	15	16
		9¾	15½	17
‡ 1	Single plane, each	$0.42	$0.42	$0.42
4	Lever cap, each	.20	.20	.30
‡ 5	Lever cap screw, each	.10	.10	.10
‡ 6	Frog complete, each	...	...	...
‡ 7	Adjusting lever, each	.10	.10	.10
‡ 8	Adjusting nut, each	.20	.20	.20
‡ 9	Lateral adjusting lever, each	.20	.20	.30
‡11	Plane handle, each	.50	.50	...
‡16	Plane bottom, each	1.40	1.50	1.50
‡21	Eccentric plate, each	.20	.20	.20
‡22	Finger rest knob, each	.20	.20	.20

No.		18	60	62
		18	60½	
‡ 1	Single plane iron, each	$0.42	$0.42	$1.12
4	Lever cap, each	.40	.30	.30
‡ 5	Lever cap screw, each	.10	.10	.10
‡ 6	Frog complete, each	...	.20	.20
‡ 7	Adjusting lever, each	.10	...	...
‡ 8	Adjusting nut, each	.20	.20	.20
‡ 9	Lateral adjusting lever, each	.20	...	...
‡11	Plane handle, each	...	...	.60
‡16	Plane bottom, each	1.50	1.20	3.50
‡21	Eccentric plate, each	.20	.20	.20
‡22	Finger rest knob, each	.20	.20	.30

No.		61-63	65	65½
‡ 1	Single plane iron, each	$0.42	$0.42	$0.42
4	Lever cap, each	.30	.40	.20
‡ 5	Lever cap screw, each	.10	.10	.10
‡ 6	Frog complete, each	.20	.20	.20
‡ 7	Adjusting lever, each	...	...	...
‡ 8	Adjusting nut, each	.20	.20	.20
‡ 9	Lateral adjusting lever, each	...	...	...
‡11	Plane handle, each	...	...	...
‡16	Plane bottom, each	1.00	1.50	1.50
‡21	Eccentric plate, each	.20	.20	.20
‡22	Finger rest knob, each	.20	.20	.20

‡BAILEY WOOD PLANES



No.	Name of Part.	22	24-25-35	26
1A	Double plane iron	$0.90	$0.95	$0.95
1	Single plane iron	.55	.60	.60
2	Plane iron cap	.35	.35	.35
3	Cap screw	.10	.10	.10
4	Lever cap	.40	.40	.40
5	Lever cap screw	.10	.10	.10
6	Frog complete	.60	.60	.60
7	"Y" adjusting lever	.10	.10	.10
8	Adjusting nut	.20	.20	.20
9	Lateral adjustng lever	.20	.20	.20
10	Frog screw and bushing	.20	.20	.20
11	Plane handle	...	.20	.20
12	Plane knob	.20	.20	.20
13	Handle bolt and nut	...	.20	.20
14	Knob bolt and nut	.10	.10	.10
16	Plane bottom	.80	.80	1.00
17	Top casting	.40	.40	.40

No.	Name of Part.	27½	28	31
1A	Double plane iron	$1.10	$0.95	$1.20
1	Single plane iron	.70	.60	.75
2	Plane iron cap	.40	.35	.45
3	Cap screw	.10	.10	.10
4	Lever cap	.40	.40	.40
5	Lever cap screw	.10	.10	.10
6	Frog complete	.60	.60	.60
7	"Y" adjusting lever	.10	.10	.10
8	Adjusting nut	.20	.20	.20
9	Lateral adjusting lever	.20	.20	.20
10	Frog screw and bushing	.20	.20	.20
11	Plane handle	.20	.20	.20
12	Plane knob	.20	.20	.20
13	Handle bolt and nut	.20	.20	.20
14	Knob bolt and nut	.10	.10	.10
16	Plane bottom	1.00	1.40	1.40
17	Top casting	.40	.40	.40

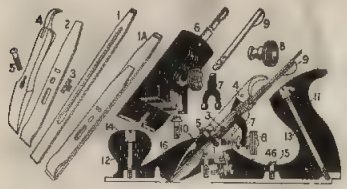
No.	Name of Part	32	26	37
1A	Double plane iron	$1.80	$1.20	$1.80
1	Single plane iron	.80	.75	.80
2	Plane iron cap	.50	.45	.50
3	Cap screw	.10	.10	.10
4	Lever cap	.40	.40	.40
5	Lever cap screw	.10	.10	.10
6	Frog complete	.60	.60	.60
7	"Y" adjusting lever	.10	.10	.10
8	Adjusting nut	.20	.20	.20
9	Lateral adjusting lever	.20	.20	.20
10	Frog screw and bushing	.20	.20	.20
11	Plane handle	.20	.20	.20
12	Plane knob	.20	.20	.20
13	Handle bolt and nut	.20	.20	.20
14	Knob bolt and nut	.10	.10	.10
16	Plane bottom	1.70	1.00	1.40
17	Top casting	.40	.40	.40

Items marked thus ‡ not carried in stock. Shipped direct from factory.

Prices on above parts except on caps are not given because of their great variance for the many different planes.

PARTS FOR PLANES

BAILEY, IRON



Name of Part. No.	No of Plane. 1	2 2C	3 3C	4 4C	4½ 4½C
‡1A—Double plane irons	$0.80	$0.85	$0.90	$0.95	$1.20
‡1 —Single plane iron	.45	.50	.55	.60	.75
‡2 Plane iron cap	.35	.35	.35	.35	.45
‡3 —Cap screw	.10	.10	.10	.10	.10
4 —Lever cap	.50	.50	.50	.50	.50
‡5 —Lever cap screw	.10	.10	.10	.10	.10
‡6 —Frog complete	.70	.70	.70	.70	.70
‡7 "Y" adjusting lever	.10	.10	.10	.10	.10
‡8 —Adjusting nut	.20	.20	.20	.20	.20
‡9 —Lateral adjusting lever	.20	.20	.20	.20	.20
‡10—Frog screw	.10	.10	.10	.10	.10
‡11—Plane handle	.40	.40	.40	.40	.40
‡12—Plane knob	.20	.20	.20	.20	.20
‡13—Handle bolt and nut	.20	.20	.20	.20	.20
‡14—Knob bolt and nut	.20	.20	.20	.20	.20
‡15—Plane handle screw	...	...	...	...	.10
‡16—Plane bottom	1.70	1.70	2.00	2.00	2.40
‡16—Plane handle screw	...	...	...	...	.10
‡46—Frog adjusting screw	.10	.10	.10	.10	.10

Name of Part. No.	No of Plane. 5	5½ 5½C	6 6C	7 7C	8 8C
‡1A—Double plane irons	$0.95	$1.10	$1.20	$1.20	$1.30
‡1 —Single plane iron	.60	.70	.75	.75	.80
‡2 —Plane iron cap	.35	.40	.45	.45	.50
‡3 —Cap screw	.10	.10	.10	.10	.10
4 —Lever cap	.50	.50	.50	.50	.50
‡5 —Lever cap screw	.10	.10	.10	.10	.10
‡6 —Frog complete	.70	.70	.70	.70	.70
‡7 —"Y" adjusting lever	.10	.10	.10	.10	.10
‡8 —Adjusting nut	.20	.20	.20	.20	.20
‡9 —Lateral adjusting lever	.20	.20	.20	.20	.20
‡10—Frog screw	.10	.10	.10	.10	.10
‡11—Plane handle	.40	.40	.40	.40	.40
‡12—Plane knob	.20	.20	.20	.20	.20
‡13—Handle bolt and nut	.20	.20	.20	.20	.20
‡14—Knob bolt and nut	.20	.20	.20	.20	.20
‡15—Plane handle screw	.10	.10	.10	.10	.10
‡16—Plane bottom	2.40	2.40	3.30	4.70	5.70
‡46—Frog adj. screw	.10	.10	.10	.10	.10

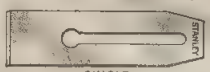
Prices on above parts except on caps are not given because of their great variance for the many different planes.

Items marked thus ‡ not carried in stock. Shipped direct from factory.

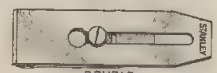
PLANE IRONS

In ordering Plane Irons for Bailey, Stanley, or Siegley Planes, please state the number of Plane for which they are wanted.

For Bed Rock and Bailey Iron and Wood Planes.



SINGLE



DOUBLE

Size	Plane Irons Single Each	Plane Irons Double Each	Plane Iron Caps Each
1¼ in. for Plane No. 1	$0.45	$0.80	$0.35
1⅝ in. for Plane Nos. 2, 602	.50	.85	.35
1¾ in. for Plane Nos. 3, 3C, 20, 22, 25, 118, 603, 603C	.55	.90	.35
2 in. for Plane Nos. 4, 4C, 5, 5C, 9, 24, 26, 35, 604, 604C, 605, 605C	.60	.95	.35
2⅛ in. for Plane Nos. 10, 10¾, 10½	.65	1.00	.35
2¼ in. for Plane Nos. 5½, 5½C, 27½, 605½, 605½C	.70	1.10	.40
2⅜ in. for Plane Nos. 4½, 4½C, 6, 6C, 7, 7C, 11, 28, 31, 36, 604½, 604½C 606, 606C, 607, 607C	.75	1.20	.45
2⅝ in. for Plane Nos. 8, 8C, 32, 7, 608, 608C	.80	1.30	.50

For Stanley and Bailey Block Planes.

Adjustable and Non-Adjustable.

	Plane Irons Per Doz.
1 in. for Plane Nos. 100, 101	$1.50
1⅜ in. for Plane Nos. 60, 60½, 61, 203	5.50
1⅝ in. for Plane Nos. 102, 103	2.50
1⅞ in. for Plane Nos. 9½, 9¾, 15, 15½, 16, 17, 18, 19, 63, 65, 65½, 120, 181, 220	5.00
1⅞ in. for Plane Nos. 110, 130	3.80
1¾ in. for Plane No. 140	6.00
2 in. for Plane Nos. 62, 64	13.45
2 in. for Plane No. 64 Special	14.95

For Gage Iron and Wood Planes

	Plane Irons Each
1¾ in. for Plane Nos. G3, G22	$0.55
2 in. for Plane Nos. G4, G5, G26, G35	.60
2¼ in. for Plane Nos. G6, G27½, G28, G30, G36	.70
2¼ in. for Plane Nos. G7, G31	.80

STANLEY PLANES

BAILEY WOOD BOTTOM BENCH

No. 22—Smooth. Length, 8 in. Cutter, 1¾ in. Weight each, 8 lbs. ..... Each $4.40

Handled Smooth

NO.	Length	Cutter	Wgt. Each	EACH
35	9 in.	2 in.	4¾ lbs	$5 50
36	10 in.	2⅝ in.	5 lbs.	6.10

NO.	Length	Cutter	Wgt. Each	EACH
26 —Jack	15 in.	2 in.	5 lbs	$4.90
27½ Jack	15 in.	2¼ in.	6 lbs	5.65
28 —Fore	18 in.	2⅝ in.	6¾ lbs.	6.20
31 —Jointer	24 in.	2⅝ in.	8½ lbs	6.80
32 —Jointer	26 in.	2⅝ in	9 lbs	7.20

STANLEY IRON BENCH

Smooth Bottom

NO.	Length	Cutter	Wgt. Each	EACH
2 Smooth	7 in.	1⅝ in.	2¼ lbs.	$ 6.00
3 —Smooth	8 in.	1⅝ in.	3½ lbs.	6.30
4 —Smooth	9 in.	2 in.	3¾ lbs	6.60
4½ Smooth	10 in.	2⅜ in.	4¼ lbs.	7.50
5½—Junior Jack	11½ in.	1⅝ in.	5 lbs.	5.40
5 —Jack	14 in.	2 in.	4¾ lbs.	7.50
5½—Jack	15 in.	2¼ in.	5¾ lbs.	9.00
6 —Fore	18 in.	2⅝ in.	7¾ lbs.	9 80
7 —Jointer	22 in.	2⅝ in.	9¼ lbs.	11.30
8 —Jointer	24 in.	2⅝ in.	9¾ lbs.	13.50

Corrugated Bottom

NO.	Length	Cutter	Wgt. Each	EACH
3-C —Smooth	8 in.	1⅝ in.	3½ lbs.	$ 6.80
4-C —Smooth	9 in.	2 in.	3¾ lbs.	7.10
4½-C—Smooth	10 in.	2⅜ in.	4¼ lbs.	8.00
5-C —Jack	14 in.	2 in.	4¾ lbs.	8.00
5½-C—Jack	15 in.	2¼ in.	5¾ lbs	9.60
6-C —Fore	18 in.	2⅝ in.	7¾ lbs.	10.30
7-C —Jointer	22 in.	2⅝ in.	9¼ lbs.	11.80
8-C —Jointer	24 in.	2⅝ in.	9¾ lbs.	14 00

All above, one in a box.

BED ROCK, IRON BENCH

Smooth Bottom

NO.	Length	Cutter	Wgt. Each	EACH
603—Smooth	8 in.	1⅝ in.	3½ lbs	$ 6.80
604—Smooth	9 in.	2 in.	3¾ lbs.	7.50

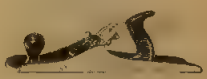
Smooth Bottom

NO.	Length	Cutter	Wgt. Each	EACH
605—Jack	14 in.	2 in	4¾ lbs	9.00
606-F Fore	18 in.	2⅝ in.	7½ lbs	11.30
608—Jointer	24 in.	2⅝ in	9½ lbs	16 70

Corrugated Bottom

NO.	Length	Cutter	Wgt. Each	EACH
603-C—Smooth	8 in.	1⅝ in.	3½ lbs	$ 7.30
604-C—Smooth	9 in.	2 in.	3¾ lbs	8 00
605-C—Jack	14 in.	2 in.	4¾ lbs.	9 50
606-C—Fore	18 in.	2⅝ in	7½ lbs	11 80
608-C—Jointer	24 in.	2⅝ in.	9½ lbs	16.20

GAGE, SELF-SETTING



Smooth Bottom

NO.	Length	Cutter	Wgt. Each	EACH
G-3—Smooth	8⅛ in.	1⅛ in.	2¾ lbs.	$5.15
G-4—Smooth	9 in.	2 in.	3 lbs	5.60
G-5—Jack	16 in.	2 in.	4½ lbs.	6.40

The self-setting feature lies in the fact that the plane iron, if taken out to be honed or sharpened, goes back in exactly the same position as before removal. Likewise, the plane cap, when taken out to allow removal of the cutter, goes back in its same position.

Handles and knobs made of rosewood.

All above, one in a box.

STANLEY PLANES

BLOCK

Non-Adjustable

No. 101—Length, 3½ in. Cutter, 1 in. Weight each, ¾ lb. ..... Each $0.60

Lever Adjustment

No. 102—Length, 5½ in. Cutter, 1⅝ in. Weight each, 1 lb. ..... Each $1 30

Non-Adjustable—Handled

No. 100—Length, 3½ in. Cutter, 1 in. Weight each, ¾ lb. ..... Each $1 20

Non-Adjustable

No. 110—Length, 7½ in. Cutter, 1⅝ in. Weight each, 1¾ lbs. ..... Each $1 60

Lever Adjustment

No. 120—Length, 7 in. Cutter, 1⅝ in. Weight each, 1½ lbs. ..... Each $1.80

Non-Adjustable

No. 102—Length, 3½ in. Cutter, 1⅝ in. Weight each, 1 lb. ..... Each $1.20

Screw Adjustment

No. 220—Length, 7½ in. Cutter, 1⅝ in. Weight each, 1¾ lbs. ..... Each $2.30

All above, one in a box.

LOW ANGLE BLOCK

Adjustable

No. 60—Nickel trimmings. Length, 6 in. Cutter, 1⅝ in. Weight each, 2¼ lbs. ..... Each $3.80

No. 65—Nickel trimmings, knuckle joint. Length, 7 in Cutter, 1⅝ in. Weight each, 2½ lbs. ..... Each 4 10

No. 65½—Same as No. 65, but japanned trim .... Each 3 60

ADJUSTABLE DOUBLE ENDER

No. 130—Lgth., 8 in. Cutter, 1⅝ in. Wgt., 2 lbs...Each $1.85

Plane No. 130 has two slots and two cutter seats. It can be used as a block plane, or, by reversing the position of the cutter and the clamping wedge (see dotted lines in the engraving), it can be used to plane close up into corners, or places difficult to reach with any other plane

BOTTOMS AND FROGS FOR IRON PLANES

STANLEY "BED ROCK"

"BAILEY" IRON

An improvement has been made in the "Bailey" Iron and the Stanley "Bed Rock" Planes, which necessitated a change in the construction of the Bottom and Frog, thereby making it impossible to use the new style Frog in an old style Bottom, or the old style Frog in a new style Bottom.

For a time an intermediate style in the Bailey Iron Plane was made, having same Frog and Bottom as the latest design, except that there was no Frog adjusting screw, consequently no clip on the Frog.

The latest design Frog or Bottom will be furnished for both the intermediate and new style planes. If your plane is of the intermediate pattern, remove the steel clip from the Frog and the parts will fit.

In order that we may fill your order correctly, kindly advise us which style plane you have.

The difference in construction of the Frogs and Bottoms is very clearly shown in the illustrations above

STANLEY PLANES

BAILEY BLOCK

Japan Trim

NO.	Length	Cutter	Wgt. Each	EACH
9½	6 in.	1⅝ in.	1½ lbs.	$3.30
15	7 in.	1⅝ in.	1⅝ lbs.	3 60

Nickel Trim

16	6 in.	1⅝ in.	1½ lbs.	3.70

Knuckle Joint

NO.	Length	Cutter	Wgt. Each	EACH
18	6 in.	1⅝ in.	2¼ lbs.	$3.90
19	7 in.	1⅝ in.	2½ lbs.	4 20

RABBET AND BLOCK

No. 140—Detachable side. Length, 7 in. Cutter, 1¾ in. Weight each, 2 lbs. ..... Each $4.20

A detachable side will easily change this tool from a block plane to a rabbet plane, or vice versa. The cutter is set on a skew.

BULL-NOSE RABBET

No. 75—Iron stock. Length, 4 in. Cutter, 1 in. Weight each, 1 lb. ..... Each $1 20

No. 90—Nickel plated. Length, 4 in. Cutter, 1 in. Weight each, 1½ lbs. ..... Each $6 60

All above, one in a box

SIDE RABBET

No. 98—Right

No. 99—Left

No. 98—R. H. Length, 4 in. Cutter, ⅛ in. Weight each, 1 lb. ..... Each $3.00

No. 99—L. H. Length, 4 in. Cutter, ⅛ in. Weight each, 1 lb. ..... Each 3.00

CARRIAGE MAKERS' RABBET

NO.	Length	Cutter	Wgt. Each	EACH
10½	9 in.	2⅛ in.	4¼ lbs.	$8 30
10	13 in.	2⅛ in.	5½ lbs.	9.90

IMPROVED RABBET

With Spur

NO.	Length	Cutter	Wgt. Each	EACH
100	8 in.	1⅝ in.	3¼ lbs.	$3 50
101	8 in.	1¼ in.	3 lbs.	3 30
102	8 in.	1 in.	2½ lbs.	3.10

DUPLEX RABBET AND FILLISTER

No. 78—Iron stock and fence. Length, 8⅛ in. Cutter, 1⅛ in. Weight each, 4 lbs. ..... Each $4.60

Remove the arm to which the fence is secured, and a handled rabbet plan is had; and with two seats for the cutter, so that the tool can be used as a bull-nose rabbet if required.

The construction of the stock is such that the plane will lie perfectly flat on either side, and can be used with right or left hand equally well while planing into corners or up against perpendicular surfaces.

The arm to which the fence is secured can be screwed into either side of the stock, thus making a superior right or left-hand fillister, with adjustable spur and depth gauge.

All above, one in a box.

STANLEY PLANES

IMPROVED SCRUB

No. 40—Iron stock. Length, 9 in. Cutter, 1⅛ in. Weight each, 3 lbs. . . . . Each $3 30

This tool has a single iron, with the cutting edge rounded, and is particularly adapted for roughing down work before using a jack or other plane.

LOW ANGLE JACK

No. 62—Length, 14 in. Cutter, 2 in. Weight each, 5 lbs. . . . . Each $8.60

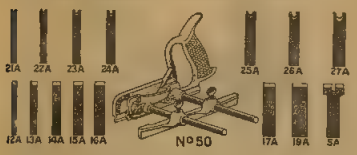
This plane is especially adapted for use in cutting across the grain on heavy work, where more power is required than can be obtained by the use of the ordinary block plane. The plane is fitted with patent adjustable throat, which enables the user to work equally well on hard or soft wood.

CIRCULAR

No. 113—Adjustable japanned. Length, 10 in. Cutter, 1¾ in. Weight each, 4 lbs. . . . . Each $9 00

This plane has a flexible steel face, which can be easily shaped to any required arc, either concave or convex, by turning the knob on the front of the plane

PLOW, BEADING AND MATCHING PLANE



No. 50—9¼ in. Nickel plated. Fifteen cutters Wgt., 4 lbs. . . . . Each $10.25

A handy tool for light work. Consists of main stock, carrying a spur and depth gauge and forming a support for one side of the cutter, a sliding section carrying a spur and forming a support for the other side of the cutter, and a fence with a 6-inch adjustment. The cutters consists of 7 plow and dado bits, ¼, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$, ½, $\frac{5}{8}$ and $\frac{3}{4}$; 7 beading tools, $\frac{1}{8}$, $\frac{5}{32}$, ¼, $\frac{5}{16}$, $\frac{3}{8}$, $\frac{7}{16}$ and ½ in., and ⅛ in. tonguing tool.

All above, one in a box

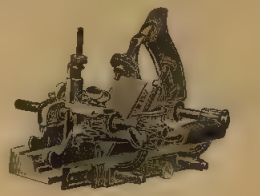
PATENT UNIVERSAL

This tool in the hands of an ordinary carpenter can be used for all lines of work covered by a full assortment of so called fancy planes.

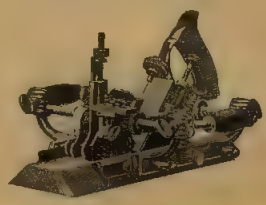
No. 55—Nickel plated, with 53 tools, bits, etc. Weight each, 18 lbs. . . . . Each $30.00

One in a box

This Plane consists of a Main Stock (A) with two sets of Transverse Sliding Arms, a Depth Gauge (F) adjusted by a screw and a Slitting Cutter with stop, a Sliding Section (B) with a vertically adjustable bottom The Auxiliary Center Bottom (C) is to be placed in front of the Cutter as an extra support, or stop, when needed. This bottom is adjustable both vertically and laterally. Fence (D) has a lateral adjustment by means of a screw, for extra fine work. The Fences can be used on either side of the Plane, and the Rosewood Guides can be tilted to any desired angle, up to 45 degrees, by loosening the screws on the face Fence (E) can be reversed for center beading wide boards. An adjustable stop to be used in beading the edges of matched boards is inserted on left side of sliding section (B)



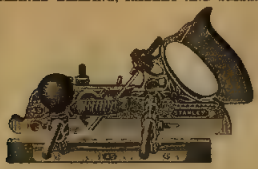
As a Moulding Plane



As a Chamfer Plane

STANLEY PLANES

COMBINED BEADING, RABBET AND SLITTING



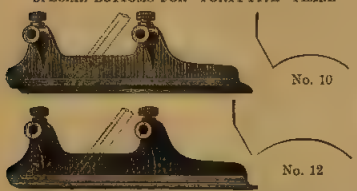
No. 45—Nickel plated, with 22 cutters. Weight each, 10¼ lbs. ..... Each $15.00

This plane embraces (1) Beading and Center Beading plane; (2) Rabbet and Filleister; (3) Dado; (4) Plow; (5) Matching Plane; (6) Sash Plane, and (7) a superior Slitting Plane.

Each Plane has seven Beading Tools (⅛, 3/16, ¼, 5/16, ⅜, 7/16 and ½ in.), ten Plow and Dado Bits (⅛, 3/16, ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝ and ¾ in.), a Slitting Blade, a Tonguing Tool and Sash Tool.

A removable rosewood face is attached to the fence.

SPECIAL BOTTOMS FOR "FORTY-FIVE" PLANE



To work hollows and rounds in the No. 45 Plane, specially formed bottoms are furnished, called Hollows and Rounds. A Hollow and its Cutter will form a Round. A Round and its Cutter will form a Hollow. Hollows and Rounds are made and sold in four sizes or sets, each set comprising 1 Hollow, 1 Round and 2 Cutters.

Hollow and Round

NO.	Cutter Works	SET
6	¼ in. ¾-in. circle	$2.80
8	5/16 in. 1-in. circle	2.80
10	⅜ in. 1¼-in. circle	3.00
12	1 in. 1½-in. circle	3.00

SWINGING FENCE MATCH

Including Tonguing and Grooving Tools

No. 48—Cuts 3/16 in. groove on boards ¾ to 1⅝ in. Centers on ⅞ in. Weight each, 3⅝ lbs. ..... Each $6.30

This Plane has two plow cutters of the same width, and one extra wide cutter. The fence in one setting exposes two cutters for cutting the tongue, and when reversed, leaves only one exposed for cutting the groove. On thicker boards than the Plane works on center, the wide cutter is used when cutting the tongue. Nickel plated. Rosewood knobs.

All above, one in a box.

PLOW, FILLETSER, DADO AND MATCH

Including Plow Bits, Slitting and Tonguing Tools

No. 46—Nickel plated. Length, 10½ in. With 11 tools, bits, etc. Weight each, 6¼ lbs. ..... Each $11.75

This tool is accompanied by eight plow and dado bits (3/16, ¼, 5/16, ⅜, ½, ⅝ and 1¼ in.), a Filletster Cutter, a Slitting Tool and a Tonguing Tool. All except the Slitting Blade are secured in the main stock on a skew.

ADJUSTABLE VENEER

No. 12-V—Japanned, iron face. Length, 6¼ in. Blade, 3 in. Weight each, 4½ lbs. ..... Each $5.85

No. 12½—Japanned, rosewood face. Length, 8½ in. Blade, 3 in. Weight each, 4½ lbs. ..... Each 7.90

No. 112—Japanned, iron face. Length, 9 in. Blade, 2 in. Weight each, 4½ lbs. ..... Each $5.10

Extra Blades—For Nos 12 and 112 (22, 28 or 32 teeth to the inch). (From Factory Only) ..... Each .45

No. 212—Japanned, iron face. Length, 5½ in. Blade, 1⅝ in. Weight each, 2 lbs. ..... Each $3.65

Extra Blades—For No. 212 ..... Each .45

The No. 12 and 112 Scraper Planes are used for scraping and finishing veneers or cabinet work. They can be used equally well as a tooth plane, and will do excellent work in scraping off old paint and glue. With each plane is furnished a scraper blade, but an extra charge is made for each toothing cutter. No. 212 is a small scraper for fine work, such as violin making and fine cabinet work.

No. 85—Iron stock, rabbet mouth, tilting handle and knob. Length, 8 in. Blade, 2 in. Weight each, 3 lbs. ..... Each 5.45

All above, one in a box.

STANLEY PLANES

WOODWORKERS' ROUTERS

No. 71—Open throat, iron stock, nickel plated. Length, 7⅛ in. With steel bits, ¼ and ½ in. Weight each, 3 lbs. . .. . .Each $4.85

Extra Cutters—For above, ¼ or ½ in.....Each .50

No. 71½—Closed throat, iron stock, nickel plated. Length, 7⅛ in. With steel bits, ¼ and ½ in. Weight each, 2½ lbs. .. . .Each $3 80

Extra Cutters—For above, ¼ or ½ in .Each 60

One in a box.

These tools are perfectly adapted to smooth the bottom of grooves, panels, or all depressions below the general surface of any woodwork. The bits can also be clamped to the back side of the upright post and outside of the stock. In this position they will plane into corners, will rout out mortises for sash-frame pulleys or will smooth surfaces not easily reached with any other tool.

INTERCHANGEABLE PLANE PARTS

BAILEY BLOCK AND STANLEY BLOCK

Part No. 1—Single Plane Irons

Plane No. — Also used on Planes Nos.

9½—9½, 9¾, 15, 15½, 16, 17, 18, 19, 63, 65, 65½.
60—60, 60½, 61, 203 Adj.
62—62.
100—100, 101 Non-Adj
102—102 Non-Adj.
103—103 Adj.
110—110, 130 Non-Adj.
120—120 Adj.
140—140 Adj.
220—131, 220 Adj.

Part No. 4—Lever Cap

Plane No. — Also used on Planes Nos.

9½—9½, 9¾, 15, 15½, 65½ (Japd.).
16—16, 17, 63 (Nickel)
18—18, 19, 65 (Nickel).
60—60, 61 (Nickel).
60½—60½.
62—62.
100—101.
102—102, 103.
110—110, 130, 130.
131—131, 220.
140—140.
203—203.

Part No. 5—Lever Cap Screw

Plane No. — Also used on Planes Nos.

9½—9½, 9¾, 15, 15½, 16, 17, 62, 131, 220.
18—18, 19.
60—60, 60½, 61, 63, 65½.
65—65.
140—140.
203—203

Part No. 6—Frog Complete

Plane No. — Also used on Planes Nos.

60—60, 60½, 61, 63, 65, 65½.
62—62.
103—120
131—131.
140—140.
203—203, 220.

Part No. 7—Adjusting Lever

Plane No. — Also used on Planes Nos.

9½—9½, 9¾, 15, 15½, 16, 17, 18, 19.

Part No. 8—Adjusting Nut

Plane No. — Also used on Planes Nos.

9½—9½, 9¾, 15, 15½.
16—16, 17, 18, 19.
60—60, 65, 61, 63.
60½—60½, 65½.
62—62.
131—131.
220—140, 220.
203—203

Part No.9—Lateral Adj. Lever

Plane No. — Also used on Planes Noe

9½—9½, 9¾, 15, 15½, 18, 18, 17, 19.

Part No. 12—Plane Knob

Plane No. — Also used on Planes Nos.

110—110, 120, 130, 131, 140, 220, 63.
203—203, 61

Part No. 21—Eccentric Plate

Plane No. — Also used on Planes Nos.

9½—9½, 9¾, 15, 15½, 16, 17, 18, 19, 65, 65½.
60—60, 60½.
62—62.

BAILEY IRON, WOOD AND RED ROCK

Part No. 3—Cap Screw

Plane No. — Also used on Planes Nos.

2—2 to 8 inc., 602 to 608 inc., 22 to 37 inc.

Part No. 4—Lever Cap

Plane No. — Also used on Planes Nos.

3—3, 5¼, 603.
4—4, 5, 604, 605.
4½—4½, 6, 7, 604½, 606, 607.
5½—5½, 605½.
8—8, 608.
24—24, 26, 35.

Part No. 5—Lever Cap Screw

Plane No. — Also used on Planes Nos.

2—2 to 8 inc., 602 to 608 inc., 22 to 37 inc.

Part No. 6—Frog Complete

Plane No. — Also used on Planes Nos.

3—3, 5¼
4—4, 5.
4½—4½, 6, 7.
5½—5½
8—8.
603—603
604—604, 605
604½—604½, 605, 607
605½—605½
608—608

Part No. 7—Y Adjust. Lever

Plane No. — Also used on Planes Nos.

2—2 to 8 inc., 602 to 608 inc., 25.

Part No. 8—Adjusting Nut

3—3, 602
3—3, 603, 22 to 37 inc.
4—4 to 8 inc., 604 to 608 inc.

Part No.9—Lateral Adj. Lever

3—3 to 8 inc., 602 to 608 inc., 26 to 37 inc.

Part No. 10—Frog Screw

Plane No. — Also used on Planes Nos.

3—3 to 8 inc.

Part No. 11—Plane Handle

Plane No. — Also used on Planes Nos.

3—3, 603.
4—4, 5¼, 604.
4½—4½, 5, 5¼, 6, 7, 8, 604½ to 608 inc.
26—26, 27½, 28, 31, 32.
35—35, 37, 36.

Part No. 12—Plane Knob

Plane No. — Also used on Planes Nos.

3—3, 4, 5¼, 603, 604
4½—4½, 5, 604½, 605.
5½—5½, 6, 7, 8, 605½, 606, 607, 608.
26—26, 27½, 28, 31, 32, 36, 37

Part No. 13—Hdle. Bolt & Nut

Plane No. — Also used on Planes Nos

3—3, 603, 35, 36, 37.
4—4, 5¼, 604, 26, 27½, 28, 31, 32.
4½—4½, 5, 5½, 6, 7, 8, 604½ to 608 inc.

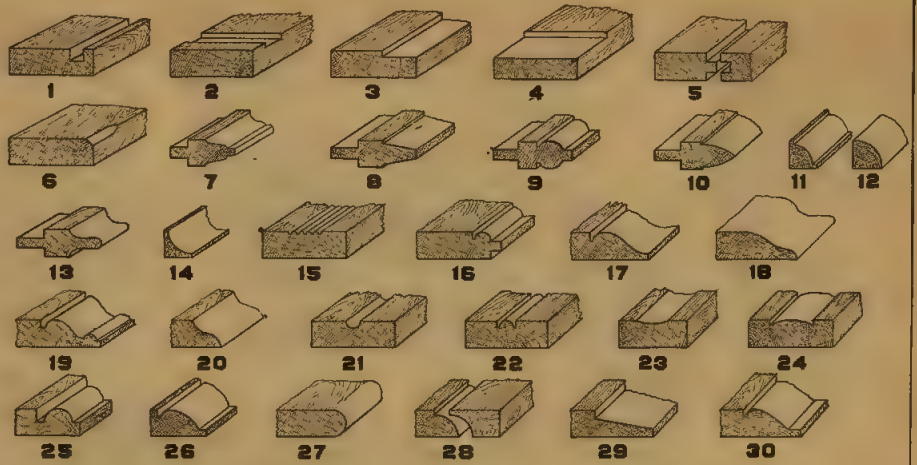
Part No. 14—Knob Bolt & Nut

Plane No. — Also used on Planes Nos.

3—3, 4, 5¼, 603, 604.
4½—4½, 5, 604½, 605.
5½—5½, 6, 7 ,8, 605½, 606, 607, 608.
22—22, 24, 25, 35.
26—26, 27½, 28, 31, 32, 36, 37.

Part 15—Plane Hdle. Screw

4½—4½, 5, 5½, 6, 7, 8, 604½ to 608 inc.



1 Plow Cut
2 Dado Cut
3 Rabbet Cut
4 Filletster Cut
5 Tongue & Groove
6 Chamfer
7 Ogee Sash
8 Bevel Sash
9 Ovalo Sash
10 Gothic Sash
11 Scotia
12 ¼ Round
13 Lambs Tongue Sash
14 Cove or ¼ Hollow
15 Reed
16 Edge Bead
17 Common Ogee
18 Roman Ogee
19 Grecian Ogee with Bead
20 Reverse Ogee
21 Flute
22 Center Bead
23 Hollow
24 Round
25 Astragal
26 Torus Bead
27 Nosing
28 Table Joint
29 Ship Lap
30 Grecian Ovalo or Base

COMMON CUTS MADE WITH STANLEY TOOLS

The Stanley Rule & Level Plant
New Britain Conn. U.S.A.

PRICE LIST OF PLANE IRONS

It will be noted that in many cases the same Single Iron fits a number of different Planes, but the Cap Iron (which combined with the Single Iron makes the Double Iron), is not the same on the Iron, Wood and Circular Planes and consequently is not interchangeable. In ordering, it is necessary to give the number of the Plane, size of Iron and state whether Single or Double Iron is required. For prices of Plane Irons not given below, see pages 128 to 131.

FOR "BED ROCK" AND "BAILEY" IRON AND WOOD PLANES

SINGLE

DOUBLE

Size	Plane Irons Single Each	Plane Irons Double Each	Plane Iron Caps Each
* 1¼ in. for Plane No. 1	$0.45	$0.80	$0.35
* 1⅝ in. for Plane Nos. 2, 602	.50	.85	.35
* 1¾ in. for Plane Nos. 3, 3C, 20, 22, 25, 113, 603, 603C	.55	.90	.35
* 2 in. for Plane Nos. 4, 4C, 5, 5C, 9, 24, 26, 35, 604, 604C, 605, 605C	.60	.95	.35
* 2⅛ in. for Plane Nos. 10, 10¼, 10½	.65	1.00	.35
2¼ in. for Plane Nos. 5½, 5½C, 27½, 605½, 605½C	.70	1.10	.40
* 2⅜ in. for Plane Nos. 4½, 4½C, 6, 6C, 7, 7C, 11, 28, 31, 36, 604½, 604½C, 606, 606C, 607, 607C	.75	1.20	.45
* 2⅝ in. for Plane Nos. 8, 8C, 32, 37, 608, 608C	.80	1.30	.50

FOR STANLEY AND "BAILEY" BLOCK PLANES

ADJUSTABLE

NON-ADJUSTABLE

Size	Plane Irons Per Doz.
1 in. for Plane Nos. 100, 101	$1.50
1⅜ in. for Plane Nos. 60, 60½, 61, 203	5.00
1⅝ in. for Plane Nos. 102, 103	2.50
* 1⅝ in. for Plane Nos. 9½, 9¾, 15, 15½, 16, 17, 18, 19, 63, 65, 65¼, 120, 131, 220	5.00
* 1⅞ in. for Plane Nos. 110, 130	3.80
1¾ in. for Plane No. 140	6.00
2 in. for Plane Nos. 62, 64	13.45
2 in. for Plane No. 64 Special	14.95

FOR "GAGE" IRON AND WOOD PLANES

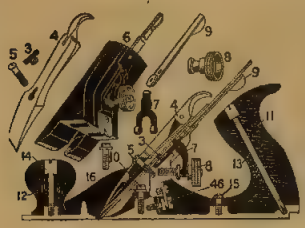
Size	Plane Irons Each
1¾ in. for Plane Nos. G3, G22	$0.55
2 in. for Plane Nos. G4, G5, G26, G35	.60
2¼ in. for Plane Nos. G6, G27½, G28, G30, G36	.70
2½ in. for Plane Nos. G7, G31	.80

PACKED 6 IN A BOX

*Items marked (*) carried in stock, balance from factory only.

PRICES OF PLANE PARTS

"BAILEY" IRON PLANES

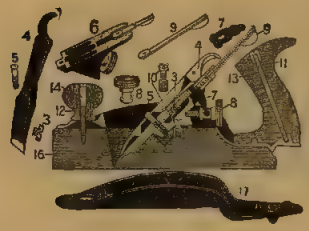


No.	Name of Part	No. of Plane	1 2	3 3c	4 4c	4½ 4½c	5 5c	5½ 5½c	6 6c	7 7c	8 8c
3	Cap Screw		$0.10								
4	Lever Cap		.50								
5	" " Screw		.10								
6	Frog Complete		.70								
7	"Y" Adjusting Lever		.10								
8	Adjusting Nut		.20								
9	Lateral Adjusting Lever		.20								
10	Frog Screw		.10								
11	Plane Handle		.40								
12	" Knob		.30								
13	Handle Bolt and Nut		.20								
14	Knob		.20								
15	Plane Handle Screw		.10								
16	Plane Bottom		1.70	2.00	2.00	2.40	2.40	2.40	3.30	4.70	5.70
46	Frog Adjusting Screw		.10	.10	.10	.10	.10	.10	.10	.10	.10

for all numbers

Add 10 per cent. for Corrugated Bottoms.

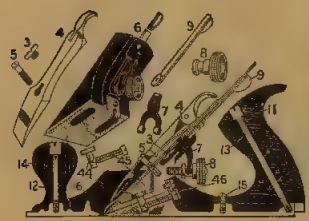
"BAILEY" WOOD PLANES



No.	Name of Part	No. of Plane	22	24 23 25	26	27½	28	31	32	36	37
3	Cap Screw		$0.10								
4	Lever Cap		.40								
5	" " Screw		.10								
6	Frog Complete		.50								
7	"Y" Adjusting Lever		.10								
8	Adjusting Nut		.20								
9	Lateral Adjusting Lever		.20								
10	Frog Screw and Bushing		.20								
11	Plane Handle			.20	.20	.20	.20	.20	.20	.20	.20
12	" Knob		.20	.20	.20	.20	.20	.20	.20	.20	.20
13	Handle Bolt and Nut			.20	.20	.20	.20	.20	.20	.20	.20
14	Knob Screw		.10	.10	.10	.10	.10	.10	.10	.10	.10
16	Plane Bottom		.80	.80	1.00	1.00	1.40	1.60	1.70	1.90	1.40
17	Top Casting		.40	.40	.40	.40	.40	.40	.40	.40	.40

for all numbers

"BED ROCK" PLANES



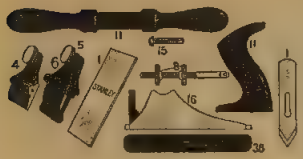
No.	Name of Part	No. of Plane	602	603 "c	604 "c	604½ "c	605 "c	605½ "c	606 "c	607 "c	608 "c
3	Cap Screw		$0.10								
4	Lever Cap		.60								
5	" Screw		.10								
6	Frog Complete		1.00								
7	"Y" Adjusting Lever		.10								
8	Adjusting Nut		.20								
9	Lateral Adjusting Lever		.20								
11	Plane Handle		.40								
12	" Knob		.30								
13	Handle Bolt and Nut		.20								
14	Knob " "		.20								
15	Plane Handle Screw			.10	.10	.10	.10	.10	.10	.10	.10
16	Plane Bottom		2.20	2.50	2.50	3.00	3.00	3.20	4.40	5.20	7.00
44	Frog Pin		.20	.20	.20	.20	.20	.20	.20	.20	.20
45	Frog Clamping Screw		.10	.10	.10	.10	.10	.10	.10	.10	.10
46	Frog Adjusting Screw		.10	.10	.10	.10	.10	.10	.10	.10	.10

for all numbers

Add 10 per cent. for Corrugated Bottoms.

PRICES OF PLANE PARTS

SCRAPER, CHAMFER AND CORE BOX PLANES

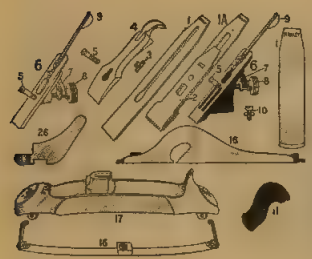


No.	Name of Part / No. of Plane	12	12½	112	212	85	56	57	72	64
1	Single Plane Iron	.45	.45	.45	.45	.45	.50	.50	.40	"
3	Lever Cap	.30	.30	.40	.20	.40	.30	.30	.20	.30
5	" " Screw						.15	.15	.10	.10
6	Frog Complete	1.20	1.40	.70	.20	.80				
8	Adjusting Nut	.20	.20	.20	"	"				
10	Frog Screw					.10				
11	Plane Handle	1.00	1.00	.40		.50	.40	.25	.50	.50
12	" Knob			.20	.40	.40		.20	.25	.25
13	Handle Bolt and Nut			.25		.20		.20	.25	.25
14	Knob " "			.20		.20		.20	.20	.25
15	Plane Handle Screw	.10	.10							
16	Plane Bottom	2.40	1.60	2.40	1.25	2.00	2.00	5.00	3.00	3.50
38	Extra Wood Bottom	.50								

RABBET, MATCHING AND DADO PLANES

No.	Name of Part / No. of Plane	39 48	49	78	148 to 148	171	190 to 192	229 258½	278	289
1	Single Plane Iron	.50	.50	.50	1.20	.80	.50	.50	.50	.50
4	Lever Cap	.20	.20	.20	.20		.20		.20	.20
16	Plane Bottom	2.40	4.00	2.50	3.00	1.80	1.80	3.00	2.50	2.40
50	Fence	1.00	1.00	.50		.60		.80	.50	.40
51	Fence Thumb Screw			.10		.10		.10	.10	.10
61	Short Arm			.20		.40		.20	.20	.10
70	Adjusting Depth Gauge	.40		.40			.40	.40	.40	.40
71	Depth Gauge Thumb Screw	.20		.20			.20	.10	.20	.20
85	Spurs with Screws	.20		.10			.10	.50	.10	.10

CARRIAGE, CIRCULAR, SCRUB, SHOOT AND FLOOR PLANES



No.	Name of Part / No. of Plane	10½ 10	10½	11½ 11	113	20	40	40½	51	74
1A	Double Plane Iron	For Prices see page 127								
1	Single " "	" " " "		" "	127 except		40	50		
2	Plane Iron Cap	.20	.20	.45	.25	.25			.45	.50
3	Cap Screw	.10	.10	.10	.10	.10			.10	.10
4	Lever Cap	.50	.50	.50	.50	.50	.50	.50	.50	.50
5	" " Screw	.10	.10	.10	.10	.10	.10	.10	.10	.10
6	Frog Complete	.70	.70	.70	.70	.70			.70	
7	"V" Adjusting Lever	.10	.10	.10	.10	.10			.10	
8	Adjusting Nut	.20	.20	.20	.20	.20			.20	
9	Lateral Adjusting Lever	.20	.20	.20	.20	.20			.20	
10	Frog Screw	.10	.10	.10	.10	.10			.10	
11	Plane Handle	.80	.80	.80			.20	.20	.40	2.00
12	Plane Knob	.80	.80		1.00		.20	.20	.20	
13	Handle Bolt and Nut	.20	.20				.20	.20	.20	
14	Knob " "	.20	.20				.20	.20	.20	
16	Plane Bottom	3.30	3.00	2.60	1.20	1.20	1.40	2.00	3.00	4.40
17	Toe Casting				2.00	3.00				
26	Frog Seat					1.00				
35	Bottom Adjusting Screw				1.00	.50				
38	" " Nut					.50				

PRICES OF PLANE PARTS

GAGE SELF-SETTING PLANES

No.	Name of Part	No. of Plane	03 04	05	06	07	022	035 036	026 027½	028 030	031
2	Steel Cap		.35	for all numbers							
3	Cap Screw		.10								
4	Lever Cap		.30								
5	" Screw		.10								
6	Frog		"	"	"	"	.60	.60	.60	.60	.60
8	Cutter Adjusting Screw		.30	.30	.30	.30	.30	.30	.30	.30	.30
11	Plane Handle		.40	.40	.30	.40	.20	.20	.20	.20	.20
12	" Knob		.30	.30	.30	.30	.20	.20	.20	.20	.20
13	Handle Bolt and Nut		.20	.20	.20	.20					
14	Knob " "		.20	.20	.20	.20					
15	Plane Handle Screw			.15	.10	.10					
16	" Bottom		*2.70	*3.10	*4.00	*5.40	.80	1.00	1.00	1.40	1.80
66	Frog Screw		.10	10	.10	.10	.10	.10	.10	.10	.10
67	" Rod						.25	.25	.25	.25	.25
00	Cutter Adjustment Slide		.25	for all numbers							
88	Clamp Plate		.20								
90	" Screw		.10								
91	Handle Base						.10	.10	.10	.10	.10
92	" Screw						.10	.10	.10	.10	.10
93	Handle Cap and Screws						.10	.10	.10	.10	.10

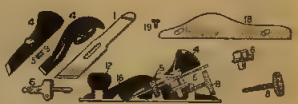
*Prices of Bottoms for Iron Planes include Frogs.

"BAILEY" AND STANLEY BLOCK PLANES

No.	Name of Part	No. of Plane	8½ 8¾	15 15½	18	60 60½	62	51 53	55	55½
1	Single Plane Iron		For Prices see page 127							
4	Lever Cap		.20	.20	.20	.40	.30	.30	.40	.20
5	" Screw		.10	.10	.10	.10	.10	.10	.10	.10
6	Frog Complete					.20	.20	.20	.20	.20
7	Adjusting Lever		.10	.10	.10	.10				
8	Adjusting Nut		.20	.20	.20	.20	.20	.20	.20	.20
9	Lateral Adjusting Lever		.20	.20	.20	.20				
11	Plane Handle		.50	.55			.80			
15	Plane Bottom		1.40	1.50	1.00	1.00	1.20	2.50	1.20	1.50
21	Eccentric Plate		.20	.20	.20	.20	.20	.20	.20	.20
22	Finger Rest Knob		.20	.20	.20	.20	.20	.20	.20	.20

STANLEY BLOCK PLANES

No.	Name of Part	No. of Plane	100 101	102 103	110	120	130	131	140	203	220
1	Single Plane Iron		For Prices see page 127								
4	Lever Cap		.10	.20	.20	.20	.20	.20	.20	.20	.20
5	" Screw							.10	.10	.10	.10
6	Frog Complete					.35		.30	.20	.20	.20
8	Adjusting Nut							.20	.20	.20	.20
12	Plane Knob				.20	.20	.20	.30	.30	.30	.30
15	Plane Bottom		.25	.40	.50	.60	.70	1.40	1.50	.50	.50
18	Detachable Side								.50		
19	Side Screw (Pair)								.20		



RABBET AND ROUTER PLANES

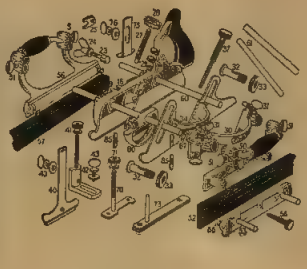
No.	Name of Part	No. of Plane	90 92	93	94	196	98 99	71 71½	78	96	97
1	Single Plane Iron		.50	.50	.60	.50	.50	.60	.40	.40	
4	Lever Cap		.30	.30	.30	.20	.20		.20	.20	
12	Plane Knob					.20	.30				.30
14	Knob Bolt and Nut						.20				.20
16	Plane Bottom		3.50	4.20	5.00	2.40	1.20	2.00	.60	1.80	
27	Cutter Bolt Adjusting Screw		.40	.40	.40						
47	Extra Attachment							.50			
48	Cutter							.50			

PRICES OF COMBINATION PLANES AND MITRE BOX PARTS

COMBINATION PLANES

No.	Name of Part	No. of Plane	45	46	47 444	50	55	148
1	Cutters	Per Set	$7.00	$4.00	$2.00	$3.50	$12.00	$4.00
16	Main Stock or Bottom		5.00	5.00	5.00	2.50	6.00	6.00
23	Cutter Bolt		.30	.30	.30	.30	.30	
24	" " Wing Nut		.30	.30	.30	.30	.35	
25	" " Clip and Screw		.10	.10	.10		.10	
27	" " Adjusting Screw		.25				.20	
28	" " " Wheel		.25				.25	
30	Sliding Section		3.00	3.00	3.00	.60	1.50	
32	Thimble						.30	
33	" Check Nut						.30	
34	Adjustable Bottom						2.50	
37	" Screw						.40	
40	Auxiliary Center Bottom						.60	
42	Angle Iron and Adjusting Screws						.60	
50	Left Fence		1.50	1.50	2.00	1.50	2.70	2.00
52	Tilting Guard Plate (Wood)						.40	
53	" Iron with Swivel						.80	
54	Left Fence Adjusting Screw						.10	
56	Right Fence				2.50		2.00	
57	" Tilting Plate						.40	
60	Long Arms	Per Pair	1.00	1.00	1.00	1.00	1.00	1.00
61	Short Arms	" "	.50	.50	.50		.50	
70	Adjusting Depth Gauge		.40	.40	.40	.40	.40	.40
73	" Beading Stop		.40				.60	
75	Slitting Cutter Stop		.20	.20	.20	.20	.20	
80	Cam Stop		.80				.80	
85	Screws with Screws		.10	.10	.10	.10	.12	

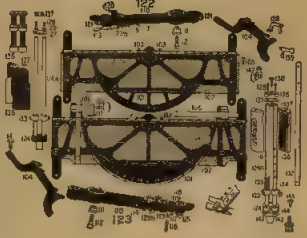
Screws, Nos. 29, 31, 41, 43, 51, 58, 71, 76, 81, 86 and 87, $0.20 each.



MITRE BOXES

No.	Name of Part	No. of Box	90	90½	240 242	244 246	346 356	460
101	Frame		$6.00	$6.00	$7.00	$7.00	$8.40	$11.20
102	Frame Board		.60	.60	.60	.60	.60	1.00
104	Frame Leg		.60	.60	.60	.60	.70	.80
106	Stock Guide				.50	.50	.50	.50
107	Stock Guide Clamp				.10	.10	.10	.10
109	Stock Guide Plate				.10	.10	.10	.10
110	Swivel Arm		1.50	1.50	2.50	2.50	2.60	3.30
111	Swivel Arm Bushing		.30	.30	.30	.30	.30	.30
112	Swivel Bushing Screw		.30	.30	.30	.30	.30	.30
113	Index Clamping Lever		.20	.20	.40	.40	.40	.50
115	" " " Catch				.10	.10	.10	.10
116	" " " Spring				.10	.10	.10	.10
122	Swivel Complete (90 and 90½)		2.00	2.00				
123	" (240 to 460)				5.00	5.00	5.50	8.00
124	"T" Base		.50	.50	1.50	1.50	1.50	1.50
124½	Uprights (each)		.30	.30	.40	.40	.60	.80
126	Saw Guide Cap				.10	.10	.10	.10
127	Saw Guide Cap Plate		.10	.10	.12	.10	.10	.10
132	Saw Guide Tie Bar				.20	.20	.20	.20
133	Left Saw Guide Stop and Screw		.30	.30	.30	.30	.30	.30
134	Right " " " "				.40	.40	.40	.40
135	Saw Guide Stop Spring				.10	.10	.10	.10
136	" " Cylinder		1.50	.60	.70	.70	.70	.70
137	" Plate		.10	.10	.10	.10	.10	.10
138	Trip Lever (Back)				.30	.30	.30	.30
139	" (Front)				.30	.30	.30	.30
141	Leveling Screw				.20	.20	.20	.20
142	Trip Clamp and Screw				.30	.30	.30	.30
146	"T" Base Clamp Screw				.25	.20	.20	.20

Screws, Nos. 103, 105, 108, 114, 117, 118, 120, 121, 123½, 128, 130, 143, 144, 145, $0.10 each.

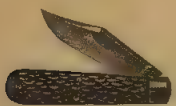


REMINGTON POCKET KNIVES

No. RA1—3¾-in. rosewood handle, spey blade, steel lined, polished steel bolster.....Dozen $8.00

R 02

No. R02—3¾-inch black handle, clip blade, steel lined, polished steel bolster.....Dozen $8.00



R 03

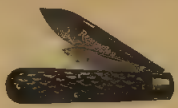
No. R03—3¾-in. stag handle, clip blade, crocus polish, steel lined, steel bolster. .....Dozen $8.00

R B041

No. RB041—3¾-in brown bone handle, steel lined steel bolsters..Dozen $8 00

No. R5—3¾-in. Pyremite handle, steel lined, steel bolsters.....Dozen $9.00

One-half dozen in a box.

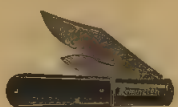


R 23

No. R23—3¾-inch stag handle, master blade etched, steel lined, steel bolster. .....Dozen $9.50

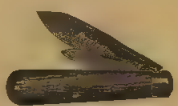
R 33

No. R33—3¾-inch stag handle, clip and pen, steel lined, steel bolster. .....Dozen $9.50



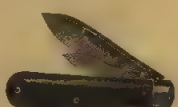
R B44

No. RB44—3¾-in. brown bone handle, steel lined, steel bolsters..Dozen $9.50



R 21

No. R21—3¾-in. rosewood handle, master, blade etched, steel lined, steel bolster.....Dozen $9.50



R 22

No. R22—3¾-inch black handle, master blade etched, steel lined, steel bolster. .....Dozen $9.50

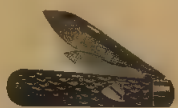
One-half dozen in a box.

No. R 83

No. R83—3¾-inch stag handle, brass lined, polished steel bolster .....Dozen $15.00

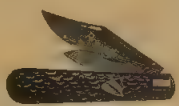
R 82

No. R82—3¾-inch black handle, brass lined, polished steel bolster. .....Dozen $15.00



R 1063

No. R1063—3¾-inch stag handle, spear blade etched, brass lined, polished, steel bolster.....Dozen $12.00



R 1073

No. R1073—3¾-in. stag handle, master blade etched, crocus polish, brass lined, steel bolster.....Dozen $12 00

R 75

No. R75—3¾-in. pyremite handle, brass lined, polished steel bolster. .....Dozen $16 00

One-half dozen in a box.

REMINGTON POCKET KNIVES

No. R103

No. R103—3¼-inch stag handle, brass lined, polished steel cap and bolster. Dozen $16 00

R 23-Ch.

No. R23-Ch—3⅜-in. stag handle, master blade etched, steel lined, steel bolster, with chain..... Dozen $11.00

R 103-Ch.

No. R103-Ch—3¼-in. stag handle, brass lined, polished steel cap and bolster, nickel-plated steel chain 18 in. long. .....Dozen $17.50

R 108-Ch.

No. R108-Ch—3½-inch cocobolo handle, brass lined, polished steel cap and bolster, nickel-plated steel chain, 18 in. long .....Dozen $17.50

R 263

No. R263 — 3⅜-inch stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished. .....Dozen $21 50

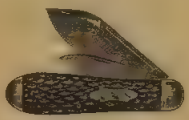
One-half dozen in a box.

R 1065

No. R1065 - 3⅜-in. Pyremite handle, brass lined, steel bolsters, master blade crocus polished and etched. .....Dozen $13.00

No. R 113

No. R113 — 3¼-inch stag handle, brass lined, polished steel cap and bolster. .....Dozen $16.00

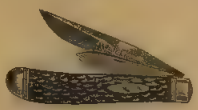


R 173

No. R173 — 3⅜-inch stag handle, brass lined, polished steel cap and bolster. .....Dozen $18.00

R 181

No. R181 — 3¼-inch rosewood handle, brass lined, polished steel cap and bolster .....Dozen $18 00



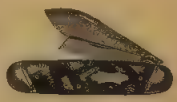
R 313

No. R313 — 3⅜-inch stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished. .....Dozen $23.00

One-half dozen in a box

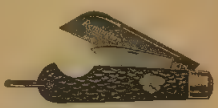
R 773

No. R773 — 3½-inch stag handle, brass lined, polished steel cap and bolster. .....Dozen $16.00



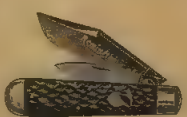
R 695

No. R595—3¼-in. Pyremite handle, brass lined, nickel silver cap and bolster, master blade crocus polished and etched .....Dozen $18.00



R 963

No. R963 — 3¼-inch stag handle, easy opened, brass lined, polished steel cap and bolster, with ring. .....Dozen $16.00



R 153

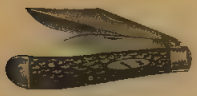
No. R153 - 3¼-in. stag handle, brass lined, nickel silver cap and bolster. .....Dozen $18 00

R 155

No. R155—3¼-in. Pyremite handle, brass lined, nickel silver cap and bolster. .....Dozen $18.00

One-half dozen in a box.

REMINGTON POCKET KNIVES

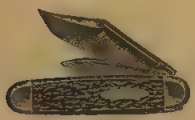


R 282

No. R282—3¾-inch black handle, brass lined, nickel silver cap and bolster, master blade crocus polished.
Dozen $23.00

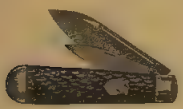
R 363

No. R363 — 3¾-inch stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished
Dozen $22.00



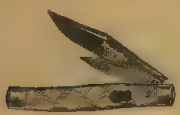
R 383

No. R383 — 3¾-inch stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished.
Dozen $22.00



R 163

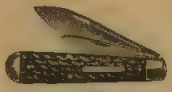
No. R163 3⅜-in. stag handle, brass lined, nickel silver cap and bolster.
Dozen $18.00



R 605-G

No. R605—3⅜-in. pyremite handle, brass lined, nickel silver cap and bolster
Dozen $20 00

One-half dozen in a box.



R 993

No. R993 — 3¼-in. stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished and etched
Dozen $18.00

R 412

No. R412 - 3¼-inch black handle, easy opener, brass lined, polished steel cap and bolster
Dozen $16.00

R 485

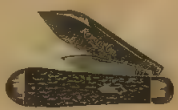
No. R485—3¾-in. pyremite handle, brass lined, polished nickel silver cap and bolster
Dozen $21.50

R 573

No. R573 — 3¾-inch stag handle, brass lined, nickel silver cap and bolster.
Dozen $18.00

R 515

No. R515—3¾-in pyremite handle, brass lined, nickel silver cap and bolster
Dozen $21.50



R 393

No. R393 - 3⅜-inch stag handle, brass lined, polished steel cap and bolster.
Dozen $16 00

One-half dozen in a box.

R 555

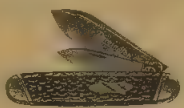
No. R555—3¾-in pyremite handle, brass lined, polished steel cap and bolster.
Dozen $18 00

R 355

No. R355—3¾-in. pyremite handle, brass lined, polished steel cap and bolster
Dozen $22.00

R 1323

No. R1323—3-in. stag handle, brass lined, nickel silver bolster and cap
Dozen $16 00

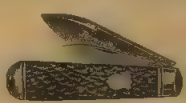


R 523

No. R523 — 3½-in. stag handle, brass lined, nickel silver cap and bolster
Dozen $20 00

R 575-G

No. R575—3¼-in. pyremite handle, brass lined, nickel silver cap and bolster.
Dozen $18 00



R 143

No. R143 — 3¾-in. stag handle, brass lined, nickel silver cap and bolster.
Dozen $18.00

One-half dozen in a box.

REMINGTON POCKET KNIVES

R 673

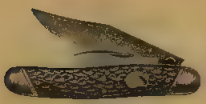
No. R673 — 3-inch stag handle, brass lined, nickel silver cap and bolster. .. Dozen $16.00

R 674

No. R674 — 3-inch pearl handle, brass lined, nickel silver cap and bolster. Dozen $33.50

R 675-G

No. R675—3-in. pyremite handle, brass lined, nickel silver cap and bolster. .. ..Dozen $18.00



R 623

No. R623 — 3¼-inch stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished. .....Dozen $24.00

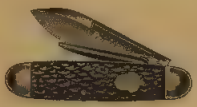
R 625-L

No. R625—3½-in pyremite handle, brass lined, nickel silver cap and bolster, master blade crocus polished. Dozen $24.00

One-half dozen in a box.

R 145

No. R145—3⅜-in. Pyremite handle, brass lined, nickel silver cap and bolster. Dozen $18.00



R 343

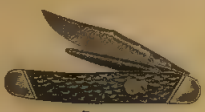
No. R343 — 3¾-inch stag handle, brass lined, polished steel cap and bolster. .Dozen $20.00

R 4143

No. R4143—3⅜-inch stag handle, brass lining, nickel silver tips, Turkish clip blade crocus polished. Dozen $17.50

R 4145

No. R4145—3⅜-inch pyremite handle, slender Turkish blade crocus polished and etched, pen blade blue glazed, brass lined, nickel silver tips. Dozen $21.50



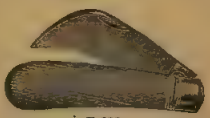
R 633

No. R633 — 3¼-inch stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished, punch blade blued and polished. ..Dozen $24.00

One-half dozen in a box.

R 3853

No. R3853 — 4-in. stag handle, brass lined, steel bolsters.....Dozen $24.00



R 698

No. R698—4¼-in. cocobolo handle, steel lined, steel bolster, with thong hole .....Dozen $18.00

R 662

No. R662—3¾-inch black handle, spear blade, crocus polished and etched, brass lined, nickel silver cap and bolster . Dozen $21.00

R 219

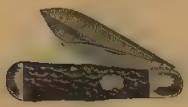
No. R219—2¾-inch, easy opener, solid brass handle, spear blade, crocus polished and etched..... Dozen $20.00

R 955

No. R955—5-in. Pyremite handle, brass lined, steel cap and bolster, plain clip blade .....Dozen $20.00

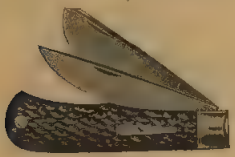
One-half dozen in a box.

REMINGTON POCKET KNIVES



R 1233

No. R1233—3¼-in. stag handle, brass linings, nickel silver cap and bolster, sabre spear blade crocus polished and etched .....Dozen $24.00

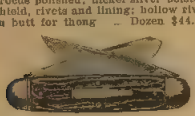


R 1123

No. R1123—Hunting Knife, 4½-in. stag handle, skinning blade crocus polished and etched, sticking blade blue glazed, both blades with round back, flush joint, brass lined, nickel silver bolster, thong hole..... ....Dozen $42 00

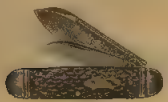
R 1306

No. R1306—4½-in genuine stag handle, one blade, sticking and skinning; crocus polished; nickel silver bolster, shield, rivets and lining; hollow rivet in butt for thong .. Dozen $44.00



R 4466

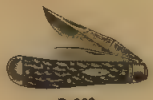
No. R4466—3¾-in. genuine stag handle, two blades (1 lance, 1 spey), both crocus polished; sunk joints; nickel silver bolster, shield, rivets and lining..... .....Dozen $36.00



R 563

No. R553 — 3¼-inch stag handle, brass lined, polished steel cap and bolster. .Dozen $16.00

One-half dozen in a box

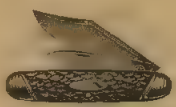


R 983

No. R983 — 2¾-in. stag handle, brass lined, nickel silver cap and bolster, sabre clip, crocus polished and etched . . . Dozen $21 00

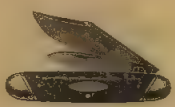
R 141

No. R141—3¼ in. rosewood handle, brass lined, nickel silver cap and bolster. Dozen $18.00



R 473

No. R473 3¾-in stag handle, brass lined, nickel silver cap and bolster Dozen $20.00



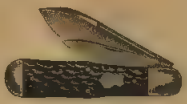
R 475

No. R475—3¾ in. Pyremite handle, brass lined, nickel silver cap and bolster. . Dozen $22 00

R 1202

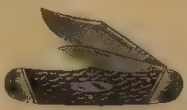
No. R1202—3¼-in. black bandle, brass lined, nickel silver cap and bolster. Dozen $23.00

One-half dozen in a box.



R 1203

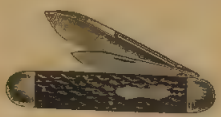
No. R1203—3¼-in stag handle, brass lined, nickel silver cap and bolster. . . Dozen $23 00



R 53

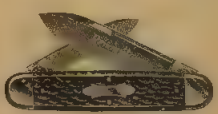
No. R53—3¾ in stag handle, brass lined, nickel silver cap and bolster, master blade crocus polished and etched Dozen $24 00

No. R55—3¾ in Pyremite handle, brass lined, nickel silver cap and bolster, master blade crocus polished and etched Dozen $27 00



R 1213

No. R1213 -4½-in. stag handle, brass lined, nickel silver cap and bolster. .....Dozen $24 00



R 4343

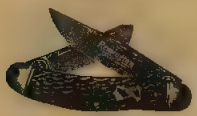
No. R4343—4½-in. stag handle, brass lined, nickel silver bolsters. ..Dozen $24.00

One-half dozen in a box

REMINGTON POCKET KNIVES

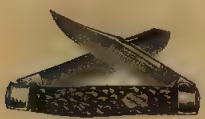
R 3375

No. R3375 — 3⅞-in. Pyremite handle, brass lined, nickel silver bolsters. ..... Dozen $24.00



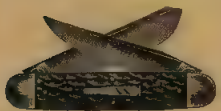
R 4253

No. R4253—3¾-in. stag handle, milled nickel silver lining and bolsters. . . . Dozen $24.00



R 3123

No. R3123—3⅛-in. stag handle, brass lined, nickel silver bolsters, double spring ..... Dozen $24.00



R 4358

No. R4358—4¼-in. stag handle, brass lined, nickel silver bolsters, master blade crocus polished and etched. ..... Dozen $32.00

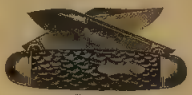
R 873

No. R873 — 3¼-inch stag handle, brass lined, nickel silver cap and bolster, large blade crocus polished. ..... Dozen $16.00

One-half dozen in a box.

R 875-G

No. R875—3¼ in. pyremite handle, brass lined, nickel silver cap and bolster, large blade crocus polished. . . Dozen $16.00



R 3353

No. R3353—3⅝-inch stag handle, spear blade crocus polished and etched, clip blade blue glazed, brass lined, nickel silver bolsters..... Dozen $24.00

R 3382 and 3383

No. R3382—3⅝-in. black handle, brass lined, nickel silver bolsters, master blade crocus polished.. .Dozen $23 00

No. R3383 - 3⅝-inch stag handle, brass lined, nickel silver bolster, master blade crocus polished....Dozen $23 00

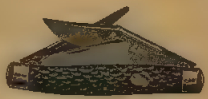
R 3063

No. R3063—3⅝-inch stag handle, milled brass lining, nickel silver bolsters, master blade crocus polished. . . .Dozen $29.50

R 3183

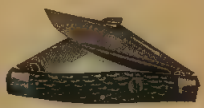
No. R3183 — 3¼-inch stag handle, brass lined, nickel silver bolsters. . . . .Dozen $27.00

One-half dozen in a box



R 3073

No. R3073— 3¾-inch stag handle, milled brass lining, nickel silver bolsters, master blade crocus polished. . . .Dozen $29.50



R 3083

No. R3083—3⅝-in. stag handle, milled brass lining, nickel silver bolsters. . . . . Dozen $36.00

No. R3085 — 3⅝-in. Pyremite handle, milled brass linings, nickel silver bolsters ..... Dozen $39.00

R 3455-F

No. R3455 — 3¼-inch pyremite handle, brass lined, nickel silver bolsters, master blade crocus polished. . . Dozen $29.50

R 3416

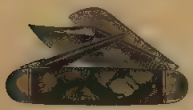
No. R3416 — 3⅝-in. Pyremite handle, milled brass lining, nickel silver bolsters, clip blade crocus polished and etched .. .. Dozen $37.00

One-half dozen in a box.

REMINGTON POCKET KNIVES

R 3223

No. R3223—3¾-inch stag handle, milled brass lining, nickel silver bolsters, master blade crocus polished.
. . . . . Dozen $28 00



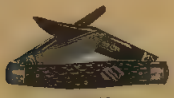
R 3225-E

No. R3225—3¾-inch pyremite handle, milled brass lining, nickel silver bolsters, master blade crocus polished.
. . . . . Dozen $30 00

R 3245-R

No. R3245—3¾-inch pyremite handle, milled nickel silver lining, nickel silver bolsters, saber clip blade crocus polished . . . . . Dozen $34.00

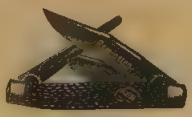
No. R3513—3¾-inch stag handle, milled brass lining, nickel silver bolsters, master blade crocus polished
. . . . Dozen $33 50



R 3513

No. R3513—3¾-inch stag handle, clip, spey and punch blades, clip blade crocus polished and etched, spey and punch blades blued and polished, brass lined, nickel silver bolsters.
. . . . . Dozen $28.00

One-half dozen in a box.

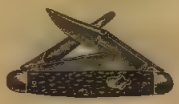


R 3963

No. R3963—3¾-inch stag handle, master blade crocus polished and etched, spey and punch blades blued, brass lined, nickel silver bolsters. . Dozen $27.00

R 3965

No. R3965—3¾-in. pyremite handle, clip blade crocus polished and etched, spey and punch blades blued and polished, brass lined, nickel silver bolsters.
. . . . . Dozen $28.00



R 3983

No. R3983—3¾-inch stag handle, clip, spey and punch blades, clip blade crocus polished and etched, spey and punch blades blued and polished, milled brass lined, nickel silver bolsters. . . . . Dozen $28.00

R 4053

No. R4053 3¾-in. stag handle, Turkish clip blade crocus polished and etched, sheep's foot blade blue glazed, punch blade blued and polished, milled brass lined, nickel silver bolsters.
. . . . . Dozen $27.00

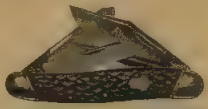
R 4173

No. R4173—3¾-inch stag handle, clip blade crocus polished and etched, pen and punch blades blued and polished, milled brass lined, nickel silver bolsters. . . . . Dozen $28.00

One-half dozen in a box.

R 6542

No. R6542—3¾-inch stag handle, milled brass lining, nickel silver bolsters, saber clip blade crocus polished.
. . . . . Dozen $30 00



R 3713

No. R3713—3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters,, master blade crocus polished.
. . . . . Dozen $33 50

R 3573 and R 3575

No. R3573—3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters, heavy gauge master blade crocus polished.. . . . . Dozen $31.00

No. R3575—3¾-inch pyremite handle, milled nickel silver lining, nickel silver bolsters, heavy gauge master blade crocus polished. . Dozen $32 00

R 4123

No. R4123—3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters, all blades full crocus polished.
. . . . . Dozen $36 00

R 3335-U

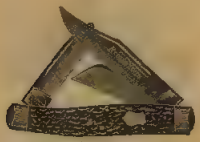
No. R3335—3¾-in. Boy Scout, pyremite handle, milled brass lining, nickel silver bolsters and shackle, master blade crocus polished.....Dozen $28.00

One-half dozen in a box.

REMINGTON POCKET KNIVES

R 3333

No. R3333 — 3⅞ inch Boy Scout, stag handle, milled brass lining, nickel silver bolsters and shackle, master blade crocus polished. . Dozen $28.00



R 3053

No. R3053—3¼-inch stag handle, milled brass lining, nickel silver bolsters, master blade crocus polished . . . . Dozen $28 00

R 3520

No. R3520—3⅜-inch genuine black buffalo horn handle, clip blade crocus polished and etched, spey and pen blades blue glazed, milled brass lined, nickel silver bolsters. . . .Dozen $29.50

R 3975

No. R3975—3⅜-in pyremite handle, clip blade crocus polished and etched, other blades blue glazed, brass lined, nickel silver bolsters .. Dozen $28.00

R 3985

No. R3985 — 3⅜-in. Pyremite handle, milled brass lining, nickel silver bolsters .....Dozen $29.50

One-half dozen in a box.

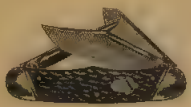
No. R3593 — 3½-in. stag handle, brass lined, nickel silver bolsters, master blade crocus polished and etched . . . . . Dozen $40.00

R 3563

No. R3563—3¼-in. stag handle, brass lined, polished steel bolsters.
Dozen $24 00

R 4263

No. R4263—3⅜-in stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished and etched..... ..... Dozen $31.00



R 3003

No. R3003—3⅜-in. stag handle, milled brass lining, nickel silver bolsters, masther blade crocus polished and etched .. ..Dozen $32 00

R 6333

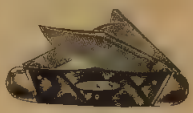
No. R6333—3½-in. stag handle, brass lined ,nickel silver bolsters, master blade crocus polished and etched. .....Dozen $27.00

One-half dozen in a box.

R 6343

No. R6343 - 3½-in. stag handle, brass lined, nickel silver bolsters, master blade crocus polished and etched . . Dozen $28 00

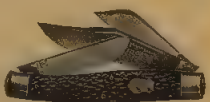
No. R4223—3¼-in. stag handle, brass lined, nickel silver bolsters, spear blade crocus polished and etched . . . . . .Dozen $24.00



R 3015

No. R3015 3⅜-in. Pyremite handle, milled brass lining, nickel silver bolsters, master blade crocus polished and etched .....Dozen $32.00

No. R3926—3⅜-in. genuine stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished and etched..... .Dozen $40 00



R 3553

No. R3553 3⅞ in. stag handle, brass lined, polished steel bolsters. . . . . Dozen $24 00

One-half dozen in a box.

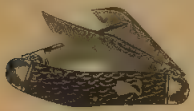
REMINGTON POCKET KNIVES

R 4135

No. R4135 - 3¾-in. Pyremite handle, milled nickel silver lining, nickel silver bolsters, Turkish clip blade crocus polished and etched...Dozen $28.00

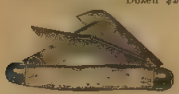
R 4133

No. R4133—3¾-in. stag handle, milled nickel silver lining, nickel silver bolsters, Turkish clip blade crocus polished and etched .....Dozen $28 00



R 4273

No. R4273—3¾-in. stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished .....Dozen $29 50



R 3504

No. R3504 3¾-in. pearl handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished and etched .....Dozen $48 00

R 4114

No. R4114—3¾-in. pearl handle, milled nickel silver linings, nickel silver bolsters, all blades crocus polished .....Dozen $32.00

R 6816

No. R6816—3¼-in. genuine stag handle, milled brass lining, nickel silver bolsters, lock blade, all blades full crocus polished.....Dozen $72 00

One-half dozen in a box.

R 3505-M

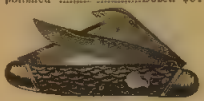
No. R3505 3¾-inch pyremite handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished .....Dozen $28 00

R 3493

No. R3493 - 3¾-inch stag handle, brass lined, nickel silver bolsters, master blade crocus polished....Dozen $24 00

R 4134

No. R4134—3¾-in. pearl handle, milled nickel silver lining, nickel silver bolsters, Turkish clip blade crocus polished .....Dozen $51.50



R 3643

No. R3643—3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished. Dozen $29.50

R 3873

No. R3873 3¾-inch stag handle, milled brass lining, nickel silver bolsters, master blade crocus polished. .....Dozen $28 00

R 4093

No. R4093—3¾-in. stag handle, Turkish clip blade crocus polished and etched, spey blade blue glazed, punch blade blued and polished, milled nickel silver lining, diagonal nickel silver bolsters .....Dozen $30.00

One-half dozen in a box.

R 4113

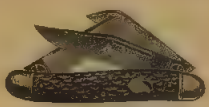
No. R4113—3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters, all blades full crocus polished. .....Dozen $36.00

R 4085-G

No. R4085 — 3¾-inch pyremite handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished .....Dozen $32.00

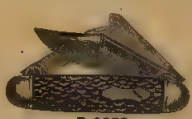
R 3923

No. R3923 —3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished .....Dozen $30.00



R 3603

No. R3603—3¾-inch stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished. .....Dozen $29 50



R 3253

No. R3253—3¾-inch stag handle, clip blade crocus polished and etched, spey and pen blades blue glazed, milled brass lined, nickel silver bolsters. .....Dozen $28 00

One-half dozen in a box.

REMINGTON POCKET KNIVES

R 3893

No. R3893 3⅝-inch stag handle, milled nickel silver lining, nickel silver bolsters, master blade crocus polished.
. . . . Dozen $24.00

R 3435

No. R3435—3¼-in. pyremite handle, spear blade crocus polished and etched, pen blade blue glazed, brass lined, nickel silver saw rivets..... Dozen $18 00

R 4363

No. R4363—3⅝-in stag handle, nickel silver lining, nickel silver bolsters, blades full crocus polished.
.....Dozen $36 00

R 4365

No. R4365 3⅝-in. pyremite handle, nickel silver lining, nickel silver bolsters, full crocus polished blades.
. . . . Dozen $36 00

R 4283

No. R4283—3⅝-in. stag handle, milled nickel silver linings and nickel silver bolsters, master blade crocus polished and etched..... .....Dozen $40 00

One-half dozen in a box.

R 15

No. R15—3½-inch pyremite handle, clip blade crocus polished and etched, pen blade blue glazed, brass lined, nickel silver cap and bolster....Dozen $20.00

R 3533

No. R3533 — 3½-inch stag handle, brass lined, nickel silver bolsters, master blade crocus polished.
.Dozen $18.00

R 3535-S

No. R3535 — 3½-inch pyremite handle, brass lined, nickel silver bolsters, master blade crocus polished
.....Dozen $20.00

R 4103

No. R4103—2⅝-inch stag handle, brass lined, nickel silver bolsters, master blade crocus polished.
. .....Dozen $18 00

R 4105-P

No. R4105 — 3½-inch pyremite handle, brass lined, nickel silver bolsters, master blade crocus polished.
..... Dozen $20.00

R 6175-W

No. R6175—3½-inch office knife, pyremite handle, brass lined, spear blade crocus polished..... Dozen $18.00

One-half dozen in a box.

R 6463

No. R6463 — 3-inch stag handle brass lined, nickel silver bolsters.
. . . . Dozen $16.00

R 6465-A

No. R6465—3-in. pyremite handle, brass lined, nickel silver bolsters.
. . . . Dozen $16.00

R 6635

No. R6635 — 3½-inch pyremite handle, brass lined, nickel silver bolsters and tip, large blade crocus polished.
.....Dozen $18.00

R 1283

No. R1283 3-in. stag handle, brass lining, nickel silver cap and bolster.
. . Dozen $18.00

R 6203

No. R6203 — 3½-in. stag handle, brass lining, nickel silver tips Dozen $18.00

R 6863

No. R6863—2⅞-inch stag handle, spear blade crocus polished, pen blade blue glazed, nickel silver linings and tip.
. . . . . .Dozen $16.00

One-half dozen in a box.

REMINGTON POCKET KNIVES

R 6865

No. R6865—2⅞ inch pyremite handle, spear blade crocus polished, pen blade blue glazed, brass lined, nickel silver tips.....Dozen $16.00

R 6473

No. R6473 — 3-in. stag handle, brass lined, nickel silver bolsters. ..Dozen $16 00

R 7223

No. R7223 — 3-in. stag handle, brass lined, nickel silver bolsters. ... ...Dozen $18.00

R 6644

No. R6644—3½ inch pearl handle, brass lined, nickel silver tips. .. Dozen $42 00

R 6464

No. R6464—2-inch pearl handle, brass lined, nickel silver bolsters, large blade crocus polished Dozen $36.00

R 4413

No. R4413—3¼-in. stag handle, milled brass linings,nickel silver bolsters. .. .. Dozen $24.00

One-half dozen in a box.

R 6914

No. R6914—2½-in. pearl handle, milled nickel silver lining... ....Dozen $24.00

R 6919

No. R6919 2½-in nickel silver handle, no lining, nickel silver shackles. ....Dozen $16 00

No. R6949—3-inch silver handle, brass lined, large blade polished, with shackle.. .....Dozen $16.00

R 6504

No. R6504—3-inch pearl handle, brass lined, nickel silver tips, nickel silver shackle .....Dozen $38 50

R 6804

No. R6804—2½-in pearl handle, blades full crocus polish, one-piece nickel silver linings and tips, nickel silver shackle.....Dozen $24.00

R 6723

No. R6723—3½-inch stag handle, master blade crocus and etched, other blades blue glazed, brass lined, nickel silver bolsters Dozen $27 00

One-half dozen in a box.

R 7074

No. R7074—2½-in. pearl handle, milled nickel silver lining, nickel silver shackle Dozen $36 00

R 7084

No. 7084—2½-in. pearl handle, milled nickel silver lining, nickel silver shackle, all blades and springs full crocus polished .Dozen $42.00

R 7234

No. R7234—3-in pearl handle, milled nickel silver lining, nickel silver tips, all blades full crocus polished .....Dozen $36.00

R 6243

No. R6243—3½-in. stag handle, milled brass lining, nickel silver tips, blades crocus polished.....Dozen $24 00

R 6554

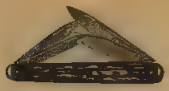
No. R6554 — 3-in. pearl handle, full milled nickel silver lining, blades full crocus polished... .....Dozen $54.00

R 6724

No. R6724—3½-in. pearl handle, brass lined, nickel silver bolsters, clip blade crocus polished... .....Dozen $42.00

One-half dozen in a box.

REMINGTON POCKET KNIVES



R 7126

No. R7126—3¼-in. genuine stag handle, nickel silver lining and bolsters, blades full crocus polished. ... Dozen $48 00

R 7026

No. R7026—3¼-in genuine stag handle, milled nickel silver lining and bolsters, blades full crocus polished . . .Dozen $44.00

R 7024

No. R7024—3¼-in. pearl handle, milled nickel silver lining and bolsters, blades full crocus polished ..... Dozen $60 00

R 7124

No. R7124—3¼-in. pearl handle, nickel silver lining and bolsters, blades full crocus polished . ...Dozen $66.00

R 6393

No. R6393—3¾-inch stag handle, milled brass lining, nickel silver bolsters, saber clip blade, crocus polished. ....Dozen $30 00

R 6533

No. R6533—3-inch stag handle, brass lined, nickel silver tips, master blade crocus polished ....Dozen $37.00

One-half dozen in a box.

R 6523

No. R6523 3-inch stag handle, brass lined, nickel silver bolsters, spear blade crocus polished ...Dozen $27.00

R 6524

No. R6524—3-inch pearl handle, brass lined, nickel silver bolsters, spear blade crocus polished. Dozen $46 00

R 6534

No. R6534 -3-inch pearl handle, brass lined, nickel silver tips, master blade crocus polished..... . .. ..Dozen $48 00

R 6330

No. R6330—3¼-inch genuine black buffalo horn handle, milled brass lining, nickel silver bolsters, spear blade crocus polished.....Dozen $28.00

R 6445

No. R6445 — 2¾-in. pyremite handle, milled brass lining, nickel silver bolsters ,polished blade. .....Dozen $40 00

R 6434

No. R6434—2¾-in pearl handle, milled brass lining, blades full crocus polished, with nickel silver shackle. . . Dozen $54 00

One half dozen in a box

R 6439

No. R6439—2¾-in. nickel silver handle, master blade crocus polished, pen blade glazed, with nickel silver shackle .....Dozen $37.50

R 7274

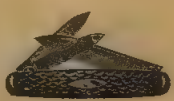
No. R7274—2¾-in pearl handle, milled nickel silver lining, all blades and springs full crocus polished. ....Dozen $54 00

R 6214

No. R6214—3¼-inch pearl handle, brass lined, nickel silver bolsters, spear blade crocus polished Dozen $48 00

R 6225-A

No. R6225 — 3¼-inch pyremite handle, brass lined, nickel silver tips, spear blade crocus polished . Dozen $28 00



R 6

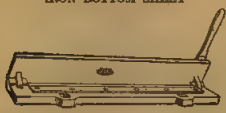
No. R6803—3¾-inch stag handle, spear blade crocus polished and etched, other blades blue glazed, brass lined, nickel silver tips. .....Dozen $24.00

One-half dozen in a box.

TINNERS' TOOLS

FOLDERS

IRON BOTTOM SHEET



Capacity, 22 Gauge Iron and Lighter

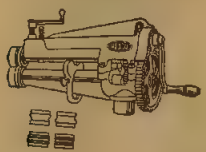
No. 2-B—30 in. long. Will form locks $\frac{1}{4}$ to $\frac{5}{8}$ in.
Weight each, 105 lbs. ..... Each $30.00

WOOD ROOFING

Improved

No. 123—Length, 30 in. Will form locks $\frac{1}{4}$ to $\frac{5}{8}$ in.
Weight each, 17 lbs. ..... Each $11.00

BEADING MACHINES



Capacity, 20 Gauge Iron and Lighter

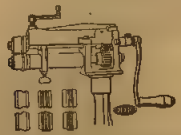
No. 617-B—Depth of throat, 12 in. Single bead rolls, $\frac{3}{8}$ in. Ogee bead in rolls, 1 in. Triple bead in rolls, 1 in. Complete with three pairs of rolls and standard.

No. 617-B—Weight each, 140 lbs. ..... Each $75 00

*No. 619-B—Depth of throat, 6¾ in. Single bead in rolls, $\frac{1}{4}$ in. Size Ogee and triple bead in rolls, $\frac{1}{8}$ in. Complete with three pairs of rolls and standard

*No. 619-B—Weight each, 85 lbs. ..... Each 65.00

*Factory only.



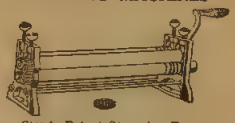
Capacity, 26 Gauge Iron and Lighter

No. 620—Weight each, 50 lbs. ..... Each $40.00

Depth of throat to frame, 6¼ in. Depth of throat to gauge, 5½ in. Diameter of rolls, 1 $\frac{11}{16}$ in. Width of rolls, 1 $\frac{7}{16}$ in. Distance between shaft, 1 $\frac{7}{16}$ in.

Above furnished with four pairs of Rolls, one each Ogee ⅝ in., Triple $\frac{5}{16}$ in., Triple Coffee Pot ½ in., and Single $\frac{1}{4}$ in. Improved Standard No. 975 is furnished

FORMING MACHINES



Stow's Patent Stovepipe Former

Machine Cut Steel Compensating Gears

NO.	Lgth. Rolls	Diam. Rolls	Wgt. Each	EACH
373	31 in.	2 in.	140 lbs.	$45.00
372*	37 in.	2 in.	165 lbs.	52.00

*Factory only.

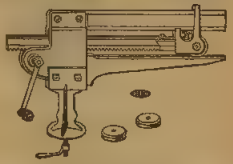
Machine Cut Steel Compensating Gears—Quick Acting Levers

NO.	Lgth. Rolls	Diam. Rolls	Wgt. Each	EACH
382	30 in.	2 in.	185 lbs.	$55.00
381-A	37 in.	2 in.	180 lbs.	65.00

The formers have finely finished rolls, are free from indentations and imperfections and are made from special rolled hard steel.

Grooves are cut in rolls to allow work with a wire to be formed. Wire should only be formed between the grooves cut for that purpose.

GROOVING MACHINES



Brass Mounted Groovers

For No. 24 Gauge Iron and Lighter

No. 502—Will groove work 20 in. Grooving horn large end 3 in., small end 1⅝ in., with Standard. Weight each, 102 lbs. ..... Each $50.00

Constructed with steel bar and milled horn. They will be found serviceable for grooving the seams on bodies of tin cans, pails, boilers, pans, etc. They are easy to operate and simple in construction. Three grooving rolls, one each $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ in., are furnished

For No. 24 Gauge Iron and Lighter

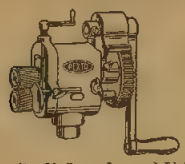
No. 518—Weight each, 200 lbs. ..... Each $100.00

Improved Automatic Rapid Groover, with flattening attachment. Will groove work 30 in.; 2 in. smallest pipe that can be grooved.

Six grooving rolls are furnished on each with $\frac{1}{8}$, $\frac{1}{4}$ and $\frac{1}{2}$ in. grooves, two with $\frac{1}{4}$ in and one flattening roll.

TINNERS' TOOLS

CORNICE MAKERS' CRIMPER



Capacity, 20 Gauge Iron and Lighter

No. 591-A — Width of crimp rolls, 1⅝ in. Complete with Standard. Weight each, 63 lbs..... .....Each $35.00

The rolls on this machine are attached to arbor in a manner that leaves the ends or faces of the rolls flush for crimping close up to a bend or angle. This machine has straight crimping rolls, adjustable for two speeds, geared for heavy work and may be run direct drive on light work.

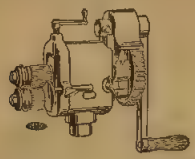
Will crimp rolls 1⅝ in. Will bead rolls 1 in. Diameter beading rolls, 1 $\frac{29}{32}$ in. Diameter crimping rolls, 1 $\frac{13}{16}$ in.

STOVEPIPE CUTTER AND CRIMPER

No. 100—Weight each, 45 lbs..... ..... Each $55.00

Will cut and crimp any size pipe, without waste, in one operation. Length, 27 in. Height, 15½ in. Carbon tool steel cutters. Crimping rolls made of steel. 12 in. scale cast on machine.

STOVEPIPE CRIMPER AND BEADER



Capacity, 20 Gauge Iron and Lighter

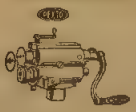
No. 583-A—Complete with Standard. Wt., 65 lbs. Each $40.00

These machines are designed to facilitate the making and putting together of sheet metal pipe of different diameters. They crimp and contract the edges of stove and conductor-pipes so that the lengths are put together easily.

Will crimp rolls 1⅝ in. Will bead rolls 1 in. Diameter beading rolls, 1 $\frac{29}{32}$ in. Diameter crimping rolls, 1 $\frac{13}{16}$ in. Size of bead ogee, $\frac{7}{16}$ in.

BURRING MACHINES

STOW'S ENCASED



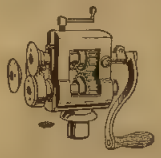
Capacity, 24 Gauge Iron and Lighter

No. 579-A Small—Diameter of rolls, 1½ in. Widest flange or burr that can be turned, $\frac{3}{8}$ in. With Standard. Weight each, 31 lbs..... .....Each $32.00

No. 580-A Large—Diameter of rolls, 2⅛ in. Widest flange or burr that can be turned, ½ in. With Standard. Weight each, 33 lbs... .... Each 36 00

Burring Machine or Jenny used for creasing, edging rims of covers for pails, boilers, etc., and for preparing circular edges of bottoms and bodies of vessels for double-seaming.

COLUMBIAN OR OPEN PATTERN



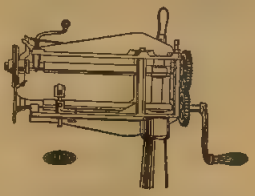
Capacity, 22 Gauge Iron and Lighter

No. 576-A Small—For burring or flanging bottoms on bodies of vessels, etc. Diameter of rolls, 1½ in. Widest flange or burr that can be turned, $\frac{7}{16}$ in. Complete with Standard. Weight each, 31 lbs... ....Each $24 00

No. 577-A Large—Diameter of rolls, 2½ in. Widest flange or burr that can be turned, ¼ in. Complete with Standard. Weight each, 25 lbs..... ..... Each 28 00

One in a wooden box.

DOUBLE SEAMING MACHINE



Capacity, 24 Gauge Iron and Lighter

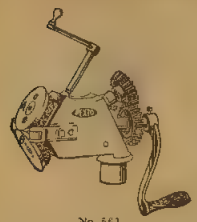
***No. 644**—Will receive work 15 in. or less in depth and 4⅛ in. or more in diameter Lower seaming face. 4⅛ in. diameter. Weight, crated for shipment, 100 lbs. .....Each $90.00

*Factory only.

This machine is adapted for general use on small work. The size of the lower face determines the smallest size bottom that can be double seamed. With this machine extra discs are not required. It is simple in construction and easy to operate.

TINNERS' TOOLS

SETTING-DOWN MACHINES



No 561

No 556-A

Capacity, 24 Gauge Iron and Lighter

No. 561 With inclined face For seams up to ⅜ in. Weight each, 50 lbs. Each $40.00

The inclined position of both upper and lower faces allows work to be held up or down and seams to be started inward while setting down, thereby facilitating the operation of double seaming.

These machines are used to close down the edges formed by a burring machine.

No. 556-A—For seams up to ⅛ in. Shipping weight, approximately 23 lbs .....Each $30.00

This type of Setting Down Machine is preferable for closing the seams in light tinware, etc.

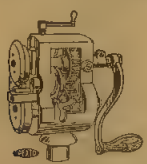
WIRING MACHINES

STOW'S ENCASED PATTERN

Capacity, 24 Gauge Iron and Lighter

No. 526-A—Diameter of rolls, 3 in. Will receive wire up to ⅛ in. diameter. With Standard. Weight each, 28 lbs.....Each $40 00

COLUMBIAN OR OPEN PATTERN



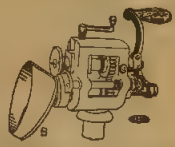
Capacity, 22 Gauge Iron and Lighter

No. 525-A—Diameter of rolls, 3 in. Will receive wire up to ⅛ in. diameter. With Standard. Weight each, 34 lbs. .....Each $32 00

Wiring machines follow the turning machines. They are intended for rolling sheet metal tightly around wire after its seat has been prepared by the turning machine. Cylindrical or straight work can be wired with these machines

ELBOW EDGING MACHINES

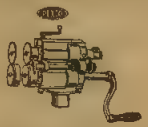
COLUMBIAN PATTERN



No. 551-A—Diameter of rolls, 2¼ in. Complete with Standard. Weight each, 26 lbs. ..... Each $32.00

TURNING MACHINES

STOW'S ENCASED PATTERN



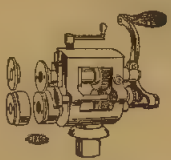
Capacity, 24 Gauge Iron and Lighter

No. 545 Small—Diameter of rolls, 2½ in. Smallest diameter of wire that can be used, ⅛ in Largest, ¼ in. With Standard. Weight each, 23 lbs.....Each $40.00

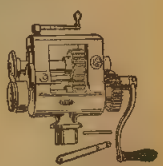
No. 546 Large—Diameter of rolls, 3 in. Smallest diameter of wire that can be used, ⅛ in. Largest, ⅜ in. With Standard. Weight each, 28 lbs. .....Each 45.00

Thick Edge or Turning Machines are for turning or curving the tops of vessels to receive wire. The wire is first formed into shape of vessel and then inserted in groove made by the turning machine. The wiring machine finishes the operation, closing metal completely around wire, adding finish and durability to the vessel.

COLUMBIAN OR OPEN PATTERN



Nos. 541-542



No 547

Capacity, 22 Gauge Iron and Lighter*

No. 541—Diameter of rolls, 2⅛ in. Smallest diameter of wire that can be used, ⅛ in. Largest diameter of wire that can be used, ¼ in. Complete with Standard.

No. 541 Small—Weight each, 26 lbs.....Each $32.00

No. 542—Diameter of rolls, 3 in. Smallest diameter of wire that can be used, ⅛ in. Largest, ⅜ in. With Standard.

No. 542 Large—Weight each, 31 lbs.....Each $36.00

Capacity, 18 Gauge Iron and Lighter

***No. 0547**—Diameter of rolls, 3¼ in. Smallest diameter of wire that can be used, ⅛ in. Largest, ⅜ in. With Standard.
***No. 0547**—Weight each, 115 lbs. Each $75.00

*Factory only

TINNERS' TOOLS

MACHINE STANDARDS

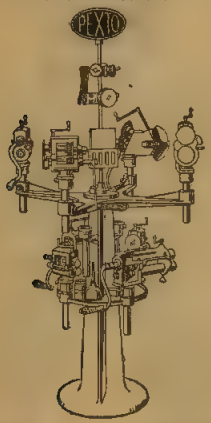
No. 976 No. 975 No. 977

No. 975—Regular Offset. Size of hole, 1⅝ in. Height over all from bench, 9¾ in. Weight each, 10½ lbs. . . . . Each $3 00

No. 976 Wiring Offset. Size of hole, 1⅝ in Height over all from bench, 9¾ in Wgt each, 11 lbs....Each 3.00

No. 977—Extra Heavy. Size of hole, 2¼ in Height over all from bench, 10⅝ in. Weight each, 24 lbs.....Each 6.00

HOLDALL REVOLVING



***No. 969**—Weight each, 268 lbs. . . Each $75.00

*Factory only.

Features—

No. 1—A place for everything and everything in its place. How many times have you delayed that rush job owing to misplacing a roll you could not find when you needed the most or how much valuable time have you consumed in locating a face wrench at each time it was necessary to change a roll?

No. 2—A Revolving Turret holding four machines. Four operations can be completed without changing positions.

No 3—Hand Lever for holding Revolving Turret in a fixed stationary position.

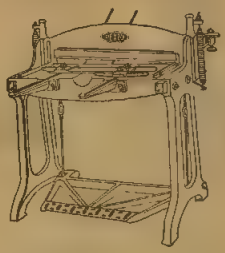
No. 4—Adjustable Machine Holders that raise, lower and swivel for suiting operating convenience of machines for the short and tall operator as well as the work in process.

No. 5—Lower Stationary Turret for holding four additional machines arranged for quickly interchanging with any machine set in upper Revolving Turret. This Lower Turret also provides for a handy shelf holding oil can, tools, etc., which are used in connection with equipment mounted.

No 6—Two additional reserve Machine Posts out of the way, supported on brackets to hold any large bench machine that will not fit in Holders provided for the smaller machines. Ten Posts in all go with each Standard.

No. 7—A handy Rack for holding Pexto Catalogue—a book that every worker in tin and sheet metal should have near him for quick reference.

SQUARING SHEARS



For 18 Gauge Iron and Lighter

No. 132-BNT—Without Side Table.....Each $125.00

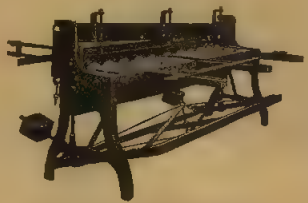
No. 132-B—With Side Table.....Each 140 00

No. 137-B—Without Side Table, with Hold-Down Attachment .....Each 175.00

SPECIFICATIONS

Nos.	132-BNT	132-B	137-B
Length of cut, in.	31	31	36
Length of front arms, in.	19	19	25½
Length of rear gauge arms, in.	24	24	24
Width of bed plate, in.	14	14	14
Shipping weight, crated, lbs.	515	540	650

PEERLESS



Capacity, 18 Gauge Iron and Lighter

***No. 8 Peerless**—Length of blade, 96 in. Weight each, 2670 lbs.....Each $700.00

*Factory only.

This Shear is the strongest and most durable on the market. It is made entirely of steel, with crucible steel working parts. They are practically unbreakable and will cut heavier material than the old style cast shears.

The knives are made of the highest grade of shear steel obtainable. The treadles are very simple in construction and are built so that the pressure, no matter where applied, is equally and automatically distributed, allowing of no breaking or twisting of treadle.

Front, back and side gauges are furnished with the machine. Automatic back gauges can be furnished by shipment from factory as an "extra."

Adjustment is possible with all working parts. Steel hold down operates automatically with tap-cutting bar and can be furnished, as an "extra," on factory shipment

TINNERS' TOOLS

PUNCH, SHEAR AND BENDER

MARVEL

Cut shows machine set for punching only Notice front leg and link are shifted back to give deep throat.

Cut shows machine set up with two punches and dies Same stripper used for both punches and dies. The larger punch and die on inside on account of increased leverage.

This cut shows machine set with bender on outside and angle iron notcher on inside.

Cut shows machine set up with row of punches and strippers Link and leg moved back at one end sufficient to accommodate bar shear

Machine shown here with shear in center set cross-wise for splitting sheets, etc. Both links and legs moved sufficient to accommodate angle iron notcher at one end, bender at other end.

This machine is built almost entirely of bar steel and practically unbreakable. The horizontal or tool holding bars are heat treated and space ⅝ in. apart to form bolt slot for clamping various tools. Pressure or leverage is applied to these members by an upper and lower eccentric connected by two links and hand levers. The lower parallel bars remain stationary at all times, the upper bars only being movable vertically. The eccentric and link arrangement are also slidably mounted on parallel bars, which make it possible and easy to change throat of machine. If machine is to be used as a punch, slip punch and die holder with bolt in slot, insert stripper and tighten, and you have a punch machine with punch visible from all sides. More than one punch and die may be clamped in position at one time if desired. All other tools such as shear, notcher for angle iron, and bender are inserted and bolted in like manner. The front leg or clamp is also slidably mounted on both the parallel bars or tool carriers and also on the angle iron base, and may be shifted entirely to rear or against rear leg of machine. Eccentrics are squared on both ends. This allows hand levers to be operated from either side or from front or rear of machine. Eccentrics are made of special alloy steel, hardened and drawn, which makes the strongest steel known for this purpose. Special tools to suit various requirements may be designed and used in place of those mentioned. The parallel bars or tool carriers are 22 in. long.

No. 22—Net weight, 260 lbs. Weight crated for shipment, 310 lbs. ..... Each $175 00

Capacity

Will punch ⅝-in. hole in ⅛-in. stock—2-in. throat.
Will punch ¼-in. hole in ¼-in. stock—6-in. throat.
Will shear ⅝x2-in. flat bars.
Will notch 1½x1½x⅛-in. angle iron.
Will bend 1½x1½x⅛-in. angle iron 90 degrees.
Will bend 1½x¼-in. flat bars.
And their equivalents in other sizes.
Vertical travel of bars, one lever, ⅞ in
Vertical travel of bars, two levers, ⅝ in.
Space between upper and lower bars, 3¼ in.

Dimensions

Height of machine, 48 in. Length, 24 in. Width, 10 in.

Unless otherwise ordered, Marvel All-Steel Punch, Shear and Bender No. 22 is regularly furnished with one punch and die holder and ¼ in., ⅛ in. and ⅝-in. punches and dies; one V block bender 2 in. long; one shear holder with shear blades 3 in. long; one 90-degree notching punch and die, with necessary bolts and washers.

This machine is much the same as No. 22, except having an eccentric and link arrangement at both ends. It is also larger and heavier. Bars or tool carriers of this machine are 4 ft. long. It will be seen from cut that the machine has an almost unlimited range of usefulness. Several punches and dies may be placed between the links spaced at distance required and a row of holes punched simultaneously. A punch and die, V block bender, a shear, a notcher, etc., may all be set in the machine at the same time ready for use. The shear as shown may be placed in the center and sheet iron may be split. It will take 46 inches between links. Legs are slidably mounted on angle iron base and may be shifted to give deep throat on one or both ends of machine. Levers may be worked from one or both ends at same time. Angle iron may be notched and bent square with tools all set in machine at same time. Various other combinations of tools may be arranged to suit requirements. Parallel bars and links and levers are heat treated. Levers are of truss variety, and instead of socket generally used, are clamped to square ends of eccentrics.

No. 23—Net weight, 475 lbs. Shipping weight, 550 lbs. ..... Each $250.00

Capacity

Will punch ⅝-in. hole in ⅜-in. stock—2-in. throat.
Will punch ¼-in. through ½-in. stock—9-in. throat.
Will shear ⅛x2-in. bars.
Will notch 1½x1½x¼-in. angle iron.
Will bend 1½x1½x¼-in. angle iron 90 degrees.
Will bend ⅞x1½-in. flat bars.
Will split ⅛-in. sheets lengthwise.
And their equivalents in other sizes.
Vertical travel of bars, one lever, ⅞ in.
Vertical travel of bars, two levers, ⅞ in.
Space between upper and lower bars, 3¼ in.

Dimensions

Height of machine, 50 in. Length, 48 in. Width, 17 in.

Unless otherwise ordered, Marvel, All-Steel Punch, Shear and Bender No. 23 is regularly furnished with one punch and die holder and ¼ in., ⅞ in. and ⅝-in. punches and dies, one V block bender 2 in. long; one shear holder with shear blades 3 in. long, one 90-degree notching punch and die, with necessary bolts and washers.

TINNERS' TOOLS

WIRE ROPE SHEARS

An efficient cable cutting shear giving satisfaction to many users in the Northwest.

Capacity, 1⅜ In. Diameter Wire Rope

No. 8—Length, 38 in. Weight, 62 lbs.....Each $150.00

Capacity, 1½ In. Diameter Cable

No. 9—Length, 30 in. Weight, 73 lbs.....Each $190.00

VOLESKE CABLE SHEARS No. 4

Warranted to cut steel cable up to 2 in. or 1¼ in. mild steel. It is supported on three wheels; can be operated and moved about by one man.

No. 4—Length over all, 44 in. Weight, 230 lbs...Each $252.00

Directions for Operating Voleske Shears

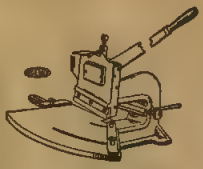
Open the jaws of shears by releasing cam on the side of ratchet drum, place your foot on lower shear shank, and lift the top shank of shears until cable is entirely unrolled from drum.

Place the cable to be cut between shears jaws and press down the retaining cable dog on side of shears jaw, so that the cable to be cut is held in square alignment with the shears jaw.

Then take up the slack in cable of shears by engaging the pawls on side of ratchet drum and turning ratchet drum handle. Now move the long ratchet handle up and down until the cable in shears jaws is completely cut.

A drop of oil now and then on all moving parts of shears will eliminate any undue wear.

SLITTING SHEARS



Combined Bench and Slitting Shears

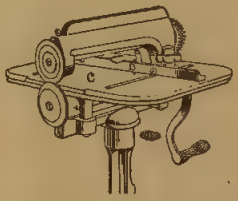
Capacity, 18 Gauge Iron and Lighter.

*No. 248-A—Weight each, 165 lbs.....Each $85 00

*Factory only.

Length of cutting blades, 6⅛ in. Depth of cutting head to gauge, 9½ in. Depth of cutting head to frame, 10 in. Size of table, 12x15⅛ in.

A splendid, practical Shear for general use in car shops, automobile shops and other shops where a variety of straight and irregular cutting is done.



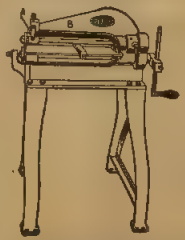
Capacity, 20 Gauge Iron and Lighter

*No. 250-A—Weight each, 100 lbs.....Each $70.00

*Factory only.

Diameter of cutters, 3⅛ in. Depth of cutting head to gauge, 9 in. Depth of cutting head to frame, 10⅛ in. Narrowest strip that can be cut, ⅜ in.

RAPID SLITTING SHEARS



For General Slitting

Capacity

16 Ga. Iron and Lighter

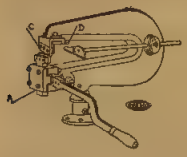
NOTE — The cutters on these shears have two cutting edges, making them reversible, and the crank is adjustable to different leverages. Where floor space is limited, these shears will prove a good substitute for long-length squaring shears.

*No. 255-A — Depth of throat, 18 in. Size of table, 20x8 in. Shipping weight, 325 lbs.....Each $135.00

*Factory only.

TINNERS' TOOLS

SCROLL SHEARS



Capacity, 20 Gauge Iron and Lighter

***No. 268-A**—Length of cutting blade, 4 in. Depth of head to gauge, 10¾ in. Weight, 90 lbs.. .....Each $80.00

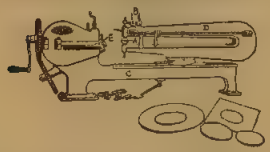
***No. 269-A**—Length of cutting blades, 4¼ in. Depth of cutting head to gauge, 17 in. Depth of cutting head to frame, 18¼ in. Weight, 155 lbs. .... Each 80.00

*Factory only.

These Shears will cut circles, ovals, ogees and all irregular shapes with the greatest ease. Well adapted for cutting from the center of a sheet. Mounted in a standard which screws to the bench and is adjustable to any angle required.

The length of cut is regulated by means of a set screw in frame back of lower blade. Upper blade can be adjusted for wear by means of the two rear adjustable screws

RING AND CIRCULAR SHEARS



Capacity, 20 Gauge Iron and Lighter

***No. 288**—Will circle from square blanks, 3¼ to 22 in. Will cut rings small as (inside diameter), 3¼ in Will cut rings large as (outside diameter), 22 in.

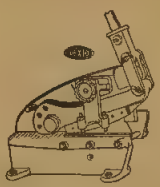
***No. 288**—Shipping weight, 195 lbs... .....Each $100.00

***No. 289**—Will circle from square blanks, 3¼ to 42½ in. Will cut rings small as 3¼ in. Will cut rings large as 42½ in.

***No. 289**—Weight, 290 lbs.. Each $125.00

*Factory only

LEVER SHEARS



Capacity, 10 Gauge Iron and Lighter
With Rod Cutting Arrangement to ½ In. Capacity
Will Cut Iron Bars ⅜ In. Square and ¼x½ In.

***No. R-0296**—Length of cutting blades, 8 in. Length of gauge rod, 22 in. Weight, 190 lbs... ..... Each $100.00

***No. 0296**—Similar to No. R-0296, except it does not have rod cutting feature Weight, 185 lbs.....Each 85.00

*Factory only.

Highly recommended for slitting sheet iron in any length or width. Patterned to allow sheets to pass freely. The lower blade is fastened to a plate that is adjustable to take up wear. The upper blade is fastened to a plate that is reinforced by the frame of the machine, overcoming any spring in cutting

EDWARDS'

For Cutting Round, Square and Flat Bar Iron

No. 5—Capacity, ¾ in. round, 4x½ in. flat. Length of knives, 7 in. Weight each, 200 lbs..... Each $50.00

No. 10—Capacity, 1 in. round, 4x⅝ in. flat. Length of knives, 7 in. Weight each, 440 lbs Each 95.00

Furnished with handle

Simplest shear on the market. For 30 years a standard. So constructed that it has a powerful leverage. Fastened to floor with only one bolt, allowing the other end to be swung around to any position. Sits so low on the floor that it is not necessary to hold up outer end of long bars when cutting.

TINNERS' TOOLS

LEVER SHEARS

ECCENTRIC

Nos. 253 and 252

Capacity, Iron and Steel, ⅜ Inch and Lighter

No. 253—Length of blades, 3½ in. Weight each, 16¼ lb. Height of bed, 6½ in. Length over all, including lever, 18 in. Weight each, 17 lbs.....Each $25 00

The Eccentric cutting device requires very little effort to cut sheet metal up to the full rated capacity.

FOR AUTO BRAKE BAND LINING

***No. 252**—Same description as No. 253 Weight each, 17 lbs.....Each $35.00

*Factory only.

Will cut Brake Band Lining up to ⅜ by 3 inches with one stroke of lever. It will prove a very desirable machine on the counters of auto supply houses, hardware stores selling automobile accessories and on the bench in the garage shop.

CHICAGO STEEL HAND BENCH

Capacity, 10 Ga. Sheets, 3-16 x 2-Inch Bars

Chicago—Length of blade, 4½ in. Weight each, 22 lbs. .....Each $18 00

Adapted for slitting sheet steel and for cutting steel bars, band iron, brake band lining, belting, etc. Equipped with adjustable hold-down.

Easiest operated and most powerful shears of their capacity on the market. They are indispensable for general shop use and outside work. Easily attached to bench or vise. Geared lever operation gives greater power than eccentric shears.

Body is pressed from heavy steel section and all other parts are steel. Blades are made of highest grade crucible steel All parts interchangeable

ROD CUTTERS

Marvel

No. 7—Cuts rods ¾ to ⅞ in. Weight, 110 lbs. .Each $45.00

COMBINATION SHEAR AND PUNCH

STOW'S

For Cutting ¼-In. Iron and Punching ⅜-In. Iron

No. 670—5½-in. cut, with five punches, ⅛, ¼, ⅜, ½ and ⅝ in. Weight each, 120 lbs.....Each $75.00

One in a case.

Extra Punches—(⅛, ¼, ⅜, ½ and ⅝ in.) .....Each $1.70

Extra Die Plate—(includes all sizes) Each 3.20

LITTLE GIANT

Built in Three Sizes—Simple, Strong, Durable, Cheap

Four thousand in use today in blacksmiths, wagonmakers, carriage makers, machine shops, implement manufacturers and all metal workers.

One hundred pounds on lever gives 25,000 pounds pressure on punch.

Capacities

Size Nos.	1		*8
Cuts flat iron, in.	⅝x2½	½x4	⅜x4
Cuts band iron, in.	¼x8	¼x7	⅛x6
Cuts round iron, in.	1	⅝	¾
Will punch	⅝ in hole in ½ in.	½ in. hole in ½ in.	⅜ in. hole in ⅜ in.
Will punch from edge, in.	3½	2¾	2⅛
Size of punches and dies with each machine, in.	⅛, ¼, ⅜, ½, ⅝, ¾	⅛, ¼, ⅜, ½, ⅝, ¾	⅛, ¼, ⅜, ½, ⅝, ¾
Floor space occupied, in.	12x26	10x24	9x22
Weight each, lbs.	525	350	280
Each complete	$150.00	125.00	100 00
Punches and dies Each,	1.50	1 50	1 50
Upper shear blade "	2.00	2.50	2.50
Lower shear blade for flat iron .....Each,	2.00	2 00	2 00
Lower shear blade for round iron .....Each,	80	.80	80

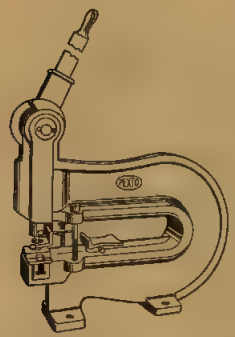
*Factory only.

Larger punches and dies, either square or round, can be furnished. Shears for cutting angle iron up to 1½x1½x¼ in. can be furnished for the No. 1 shear.

TINNERS' TOOLS

LEVER PUNCH

SAMSON



With Removable Stay Bolts, Wrought Iron Links

No. 675—Improved, with 3 punches, 1/8, 7/32 and 1/4 in.
Weight each net, 140 lbs. ..... Each $80.00

Warranted to punch No. 9 iron with "stay bolts," and No. 12 without "stay bolts." Depth of gap, 15 in. Will center on 30-in. sheets without "stay bolts," and 7-in. sheets with "stay bolts."

Extra Punches—1/8, 7/32 and 1/4 in. ..... Each $1 70

Extra Dies—1/8, 7/32 and 1/4 in. ..... Each 3.20

STEEL SCREW PUNCHES

HENDERERS

NO.	Punches	From Edge of Sheet	Weight Each	EACH
0	1/2 in. hole in 1/4-in. iron	1 1/2 in.	15 lbs.	$24 00
1	1/2-in. hole in 5/16-in. iron	1 1/2 in.	27 lbs.	30 00
2	3/4-in. hole in 1/4-in. iron	2 in.	40 lbs.	40.00
3	3/4-in. hole in 5/16-in. iron	2 1/2 in.	62 lbs.	60.00

Extra Dies

No. 0—Diameter, 1 7/16 in. Size, 1/4, 7/32, 5/16, 7/32 and 1/2 in. ..... Each $1.75

Nos. 1 and 2—Diameter, 1 7/16 in. Size, 1/4, 7/32, 5/16, 7/32, 1/2, 5/8 and 3/4 in. ..... Each 2.00

No. 3—Diameter, 1 7/8 in. Size, 1/4, 5/8 and 3/4 in. Each 2.50

Extra Punches

No. 0—Size, 1/4, 7/32, 5/16, 7/32 and 1/2 in. ..... Each $1.75

Nos. 1 and 2—Size, 1/4, 7/32, 5/16, 7/32, 1/2, 5/8 and 3/4 in. Each 2.00

No. 3—Size, 1/2, 5/8 and 3/4 in. ..... Each 2.50

These Punches are made of highest grade steel castings, having a tensile strength of 80,000 pounds per square inch. The metal is placed where it will do the most good, which is not easily attained in forgings.

Each machine is fitted with one Punch and Die, and other than these are charged extra.

HAND PUNCHES

WHITNEY PORTABLE

No. 1—Weight, 22 lbs. ..... Each $24.00

Length, 34 in. Capacity, 5/16-in. hole through 1/4-in. iron. Can furnish Punches and Dies in 13 sizes, 7/32 to 7/16 in. by 1/32 in. Complete with one Punch and one Die, 5/16 in.

No. 2—Weight, 14 lbs net. ..... Each $20.00

Length, 23 in. Capacity, 7/32-in. hole through 1/4-in. iron. Can furnish Punches and Dies in 13 sizes, 1/4 to 1/2 in. by 1/32 in. Complete with one Punch and one Die, 1/4 in.

Extra Punches

For No. 1—Sizes, 7/32, 1/4, 9/32, 5/16, 11/32 and 3/8 in. ..... Each $0 75

For No. 2—Sizes, 1/4, 9/32, 5/16, 11/32, 3/8, 13/32 and 7/16 in. Each .75

Extra Dies

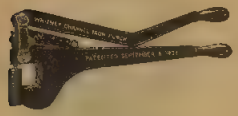
For No. 1—Sizes, 9/32, 1/4, 11/32, 5/16, 13/32 and 3/8 in. ..... Each $1.00

For No. 2—Sizes, 1/4, 9/32, 5/16, 11/32, 3/8, 13/32 and 7/16 in. Each 1.00

TINNERS' TOOLS

HAND PUNCHES

WHITNEY PORTABLE



For Channel Iron

No. 2-CI—Length, 23 in. Capacity, ¼ in. hole through ¼ in. iron. Net weight, 16 lbs.....Each $20.00

Punches to center of 4-in. channel with 1½-in. flange.

Extra Punches

For No. 2-CI—Sizes, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, ½ in...Each $0.75

Extra Dies

For No. 2-CI—Sizes, 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, ½ in...Each $1.00

WIZARD

All Steel

No links or pins to spring or split, no small parts to become lost; a self contained, correctly balanced, powerful, easy action hand punch.

No. 780—Weight, 2½ lbs.....Each $12.00

Capacity No 16 gauge iron and lighter Depth of throut, 1⅛ in Extreme length, 8¼ in.

Packed in a wooden box with three dies and three punches, sizes 1/8, 3/16 and ¼ in.

One in a box.

All parts interchangeable. Will punch up to 3/16-in. hole in 20 gauge steel. For use by machinists, roofers, galvanized-iron workers, metal-ceiling workers, etc. Depth of throat, 1⅝ in.

No. 1—Polished. Complete with 3/16-in. punch and dies, in wooden box. Weight 1½ lbs. Each $4.00

Extra Punches and Dies—Sizes, 1/8, 3/16, ¼, 5/16, 3/8 and ¼ in. (One Punch, one Die).....Set $1.00

ROOFING TONGS

*No. 770¾—Will turn one size lock, ¾ in. Length of blades, 13½ in. Weight, 7 lbs.....Each $10.00

*No. 771—Will turn one size lock, 1 in. Length of blades, 13½ in. Weight, 8 lbs.....Each 10.00

*No. 771¼—Will turn one size lock, 1¼ in. Length of blades, 13½ in. Weight, 9 lbs.....Each 10.00

*No. 771½—Will turn one size lock, 1½ in. Length of blades, 13½ in. Weight, 9½ lbs.....Each 10.00

*No. 771¾—Will turn one size lock, 1¾ in. Length of blades, 13½ in. Weight, 10 lbs.....Each 10.00

*Factory only.

ROOFING TONGS

Steel, Improved, Adjustable

No. 778—Net weight, 9½ lbs. .....Each $12.00

Length of handle, 31 in. Width of blade, 2 in Length of blade, 18½ in.

Will turn five different width blocks, ½, ¾, 1, 1¼ and 1½ in

HANDY SEAMER

No 701 Length of blade, 3½ in. Width, ⅞ in. Over all, 7¼x3½ in. Weight, 1 lb. .....Each $2.25

GUTTER TONGS

*No. 777—Depth of jaws, 14 in. Length of blades, 12½ in Weight, 10 lbs. .....Each $8.00

*Factory only.

DOUBLE SEAMER

Burritt's Improved

For Tin Roofing.

*No. 742 — Common Gauge. Weight per set, 40 lbs. ...Set (Two Pairs) $30.00

Two pairs constitute a set.

*Factory only

TINNERS' TOOLS

HAND DOUBLE SEAMER

To Match Roofing Tongs ¾x1 and 1x1¼ Inches

*No. 744—Weight each, 16 lbs. .....Set of Two $7.50

*Factory only.

MANDRELS

Hollow, Cast Iron, with Wrench

No. 910—Flat part, 9 in. long, 6 in. wide; oval part, 31 in. long. Full length, 40 in. Weight each, 60 lbs. . . . . Each $18.00

ADAMS STOVEPIPE

No. 2—Length, 36 in. Weight each, 40 lbs. .....Each $13.50

STAKES

BEAKHORN

Wrought Iron with Steel Faces

No. 901—Weight, 37 lbs.....Each $35.00

Length round end, 16½ in. Length flat end, 20 in. Width of flat end tapers, 2¼x1¾ in. Diameter of round end at largest point, 2¼ in. Diameter of round end at smallest point, ⅞ in.

HATCHET

No. 944—Length of blade, 11 in. Width of blade at center, 2⅞ in. Width of blades at ends, 1⅝ in. Weight, 6½ lbs. .....Each $10.00

STAKES

CREASING

No. 928—Length, 15 in. Size of grooves for wire, Nos. 1, 3, 4, 6, 7, 8. Weight, 11½ lbs.. .....Each $18.00

BLOWHORN

No. 925—Weight, 14 lbs. ..Each $20.00

Length of large end, 9 in. Length of small end, 18 in. Diameter of small end at wide point, 1½ in. Diameter of small end at narrow point, ⅝ in. Diameter of large end at wide point, 4¾ in. Diameter of large end at narrow point, ½ in.

CANDLE MOULD

No. 956—Weight, 7 lbs. .....Each $12.50

Length of small end, 9½ in. Length of large end, 18½ in. Diameter of small end at wide point, 1¼ in. Diameter of small end at narrow point, ½ in. Diameter of large end at wide point, ⅝ in. Diameter of large end at narrow point, ½ in.

CONDUCTOR

Cast Iron, Polished Face

No. 971—Weight, 28 lbs.....Each $15.00

Turned. Length of large end, 15 in. Length of small end, 11½ in Diameter of large end, 2¼ in. Diameter of small end, 1⅜ in.

DOUBLE SEAMING

Wrought Iron and Steel

No. 921—Weight, 37 lbs.....Each $30.00

Length of large end, 17 in. Length of small end, 12 in. Diameter each end, 1¾ in.

STAKES

DOUBLE SEAMING

Wrought and Cast Iron with Four Heads

No. 949—Weight, 110 lbs....Each $30.00

Size of heads—A, 6 in. diameter, B, 8½x2⅝x3¼ in.; C, 5½x4½ in.; D, 5¾x4¼x3⅝ in.

NEEDLE CASE

No. 957—Weight, 4 lbs.....Each $10.00

Length of flat end, 8 in. Length of small end, 10½ in. Width of flat end, 1 in. Diameter of round end at smallest point, ⅞ in. Diameter of round end at largest point, ⅞ in.

SQUARE BEVEL EDGE

No. 931—Size of face, 2x5 in. Weight, 16 lbs.....Each $16.00

POLISHED ROUND HEAD

Cast Iron

No. 965—Head, 3 in. Length, 12½ in. Weight, 5½ lbs.....Each $5.00

SQUARE

Wrought Iron and Steel

No. 935—Face, 2¾x4½ in. Weight, 11 lbs. .....Each $12.00

No. 936—Face, 2¾x4½ in. Weight, 11 lbs. .....Each $10.00

BENCH PLATES

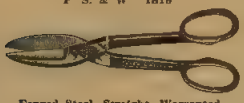
Cast Iron, Planed Surface

No. 981—37½x8 in. Weight net, 46 lbs. . . . . Each $16.00

TINNERS' TOOLS

SHEARS

P. S. & W. "1819"



Forged Steel, Straight, Warranted

NO.	Lgth. Cut	Cuts Iron	Wgt. Each	EACH
7	3⅜ in.	25 gauge	2⅝ lbs.	$5 20
8	3½ in.	26 gauge	2¼ lbs.	4 20
9	3 in.	27 gauge	1⅝ lbs.	3 70
10	2½ in.	28 gauge	1⅛ lbs.	3 30

OCCIDENT

Forged Steel, Straight, Warranted

NO.	Length Cut	Wgt. Each	EACH
06¾	4½ in.	3 lbs.	$5.00
07	4 in.	2⅞ lbs.	4 80
08	3½ in.	2 lbs.	4.30
09	3 in.	1½ lbs.	4.20
010	2½ in.	1 lb.	3 80
012	2 in.	⅛ lb.	2 50

WISS

Forged Steel—Regular Pattern

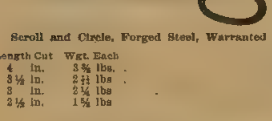
NO.	Length Cut	Full Length	Wgt. Each	EACH
7-W	4 in.	14½ in.	3¼ lbs.	$5.20
8-W	3½ in.	13⅜ in.	2½ lbs.	4.20
9-W	3 in.	12½ in.	2 lbs.	3.70
10-W	2½ in.	11⅛ in.	1½ lbs.	3 30

BERGMAN'S

Handy and practical general purpose tools. Drop forged. Carefully tempered. Blades highly polished. Handles, black baked japan finish.

NO.	Length	Wgt. Dozen	DOZEN
2¾	10 in.	13 lbs.	$16.00
3¼	12 in.	18 lbs.	19 00

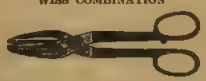
LYONS COMBINATION



Scroll and Circle, Forged Steel, Warranted

NO.	Length Cut	Wgt. Each	EACH
165	4 in.	3⅝ lbs.	$4 90
170	3½ in.	2⅓ lbs.	4 20
180	3 in.	2¼ lbs.	3.70
190	2½ in.	1⅝ lbs.	3 40

WISS COMBINATION



For circular as well as straight work. The snips are made with straight blades, but are ground and shaped in such a manner that they can be used for cutting curves, irregular shapes or straight work.

NO.	Full Length	Length Cut	Wgt. Each	EACH
100	11½ in.	2⅛ in.	1½ lbs.	$2 75
10	12⅛ in.	3 in.	1¾ lbs.	3 00
18	13½ in.	3⅛ in.	2⅛ lbs.	3.25
17	14¼ in.	4 in.	2¾ lbs.	4.00

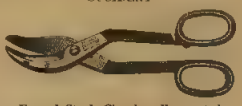
SHEARS

POCKET

Forged Steel

No. 82 — Total length, 7 in. Length of cut, 2 in. Weight dozen, 6 lbs. Dozen $16 00

OCCIDENT



Forged Steel, Circular, Warranted

NO.	Wgt. Each	EACH
C8	2 lbs.	$5.00
C9	1¾ lbs.	4.60
C10	1 lb.	4 20

PEXTO

SNIP BOARD

Size 13¼x22 inches

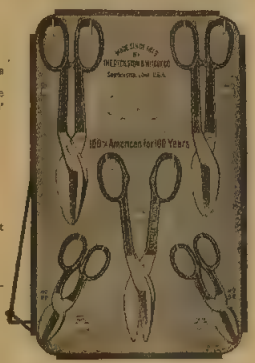
Consisting of the following Tinners' Snips:

1 pair No. 9
3-inch cut.
(Original 1819 Straight Snip.)

2 pair No. 49
3-inch cut.
(Samson Straight Snip.)

1 pair No. 149
3 inch cut
(Hercules Combination Snip.)

4 pair No. 82
2-inch cut.
(Pocket Snip.)



No. 4 Pexto Snip Assortment—Weight, 25 lbs. Assortment $18 00

The display stand is handsomely enameled. The background is enameled in an orange color, the edge is trimmed with blue. The words "Pexto Snips" are white and are set in a blue background.

The selection of snips gives an assortment which is salable.

The No. 9 is the highest grade of snip, while the No. 49 is a lower priced tool, but of excellent quality.

The No. 149 is a general utility snip, which will cut circles or scrolls and also do the work of the ordinary straight snip.

The No. 82 is a pocket snip, handy and useful.

The assortment is packed in a wooden case 25½x15¾x4½ in. Each snip is packed in a separate cardboard box.

Highest Quality 14k Gold-Filled Head Black Ebony Canes

Hand Chased. *Guaranteed to Wear Twenty Years.* *Roman Finish.*

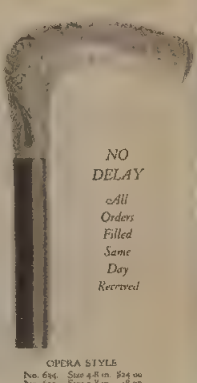
PRINCE OF WALES STYLE
No. 5001
Size 6-8 inch only
Price . . $30.00 each
Complete

DOME STYLE
No. 5002
Size 6-8 inch only
Price . . $30.00 each
Complete

POLO STYLE
No. 5003
Size 6-8 inch only
Price . . $30.00 each
Complete

GOLF STYLE
No. 515 Size 7-8 in. $4.00
No. 516 Size 7-8 in. 6.00
No. 517 Size 7-8 in. 60.00
With 14k solid gold engraving shield and finest hand chasing:
No. 516 Size 7-8 in. $16.00
No. 516 Size 6-8 in. 68.00
No. 517 Size 7-8 in. 80.00

CANE
No. 1237 Size 7-8 in. $24.00
No. 1238 Size 8-8 in. 30.00
With solid gold engraving shield and finest hand chasing:
No. 1217 Size 7-8 in. $48.00
No. 1218 Size 8-8 in. 70.00

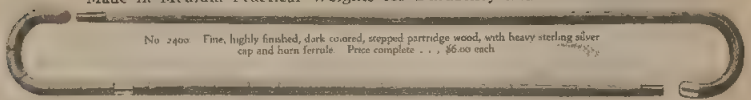


NO DELAY
All Orders Filled Same Day Received

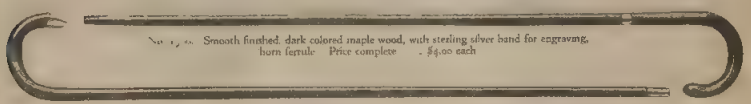
OPERA STYLE
No. 634 Size 4-8 in. $24.00
No. 635 Size 5-8 in. 28.00
No. 636 Size 6-8 in. 34.00
No. 637 Size 7-8 in. 46.00
With 14k solid gold engraving shield and finest chasing:
No. 614 Size 7-8 in. $56.00
No. 616 Size 6-8 in. 68.00
No. 617 Size 7-8 in. 80.00

All above heads stamped with our quality mark for identification

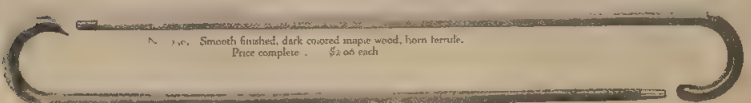
Gentlemen's High-Grade Walking Sticks; Prince of Wales Style
Made in Medium Practical Weights for Durability and Full-Dress Use



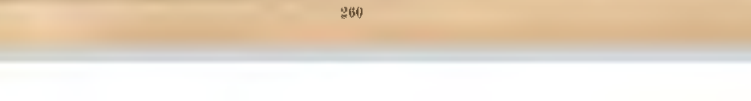
No. 2400. Fine, highly finished, dark colored, stepped partridge wood, with heavy sterling silver cap and horn ferrule. Price complete . . . $6.00 each



No. 2401. Fine, highly finished, dark colored, stepped partridge wood, with heavy sterling silver band for engraving, horn ferrule. Price complete . . . $6.00 each



No. 1500. Smooth finished, dark colored maple wood, with sterling silver band for engraving, horn ferrule. Price complete . . $4.00 each



No. 1501. Smooth finished, dark colored maple wood, with sterling silver cap for engraving, horn ferrule. Price complete . . $4.00 each

No. 1502. Smooth finished, dark colored maple wood, horn ferrule. Price complete . . $2.00 each

No. 751. Dark colored, finest grade hickory wood, made in very heavy or medium weight for cripples. Price complete . . $5.00 each.

ENAMEL RANGES

Hoosier.

All Cast Iron.

Prize—Blue Enamel—Square or with Reservoir.

Beautifully designed nickeled and enameled high closet with drop doors. One continuous piece enamel splasher in back of high closet. Smoke pipe is placed behind splasher back of range, affording more cooking space. Cooking top polished, requiring no blackening. Large, raised pouch feed door for feeding fuel. Drop poker door with slide. Oven thermometer indicates heat of oven accurately for baking.

Enamel and nickel drop oven door, spring balanced. Aluminized oven with wire oven rack. Combination drop fire and swing ash pit door. Detachable, copper contact heating reservoir. Detachable towel bar. Firebox accurately correct in size, shape, and weight. All linings are sectional, heavy, with hot blast openings and air spaces behind them to prevent warping. Are removed without nuts and bolts.

Interlapping, clinkerless, duplex grate for coal or wood. All dampers are so constructed not exposed to heat. All doors are ground air-tight fitting, giving perfect control of heat in oven. Round-cornered, sootless flues. Cast flue back will not rust or be affected by creosote. Cast extension for wood, cast iron oven plate. Finest smooth silvery finished nickel. Easily kept clean, and so made will not tarnish. Provisions made for water front.

Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Style	Each
A38B	19x18x13	41½x25	6—8 inch	510	Square	$208.80
D38B	21x20x13	43 x27	6—9 inch	540	Square	215.40
A39BR	19x18x13	49¾x25	6—8 inch	550	Reservoir	230.00
D39BR	21x20x13	51 x27	6—9 inch	580	Reservoir	236.60

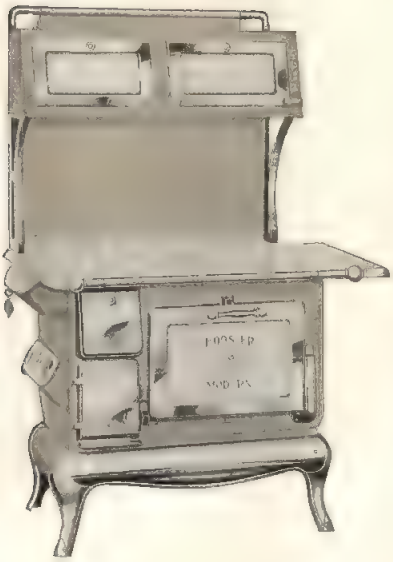
"A" series take No. 18 Prize waterfronts—Each .$10.00 **"D" series take No. 20 Prize waterfronts**—Each $10.00

All carefully crated for shipping.

Hoosier.

All Cast Iron.

Modern—Gray Enamel—Square or with Reservoir.



Beautifully designed enameled and high closet with drop doors. Smokepipe is placed behind splasher back of range, affording more cooking space. Cast iron body. Top in four section, reinforced to prevent warping. French plate and short center over firebox. Large cooking surface. Complete polished top. Firebox properly proportioned and adapted to any fuel.

Heavy sectional linings, ventilated, held in place by lugs. Interlapping, clinkerless duplex grates, change from wood to coal and with quarter turn of crank automatically locks. The pouch feed door frame and lower poker door frame is made in one piece. Aluminized oven with wire oven rack. Top oven plate ribbed to equalize heat in oven. Thermometer indicates accurate heat. Oven door has positive spring and spiral spring. Provisions made for water front. By removing front wall it will fit in its place in front of firebox. Large warming oven, with enamel drop door, well balanced. Cast brackets, electro-nickel plated.

Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Style	Each
A16G	18x18x12	41x28	6—8 inch	420	Square	$185.40
B17GR	18x18x12	46x28	6—8 inch	475	Reservoir	209.40

Either stove takes "Modern" waterfront—Each $10.00

All carefully crated for shipping.

ENAMEL RANGES

Hoosier.

All Cast Iron.

Marvel—Blue Enamel Square or with Reservoir.

Beautifully designed enameled high closet with drop doors. Smokepipe is placed behind splasher back of range, affording more cooking space. Large enamel reservoir. Round-cornered sootless flues. Cast iron body. Top in four sections, reinforced to prevent warping. French plate and short center over firebox. Large cooking surface. Complete polished top. Firebox properly proportioned and adapted to any fuel.

Heavy sectional linings, ventilated, held in place with lugs. Interlapping, clinkerless duplex grates, change from wood to coal and with quarter turn of crank automatically locks. The pouch feed door frame and lower poker door frame made in one piece. Aluminized oven with wire oven rack. Top oven plate ribbed to equalize heat in oven. Thermometer indicates accurate heat. Oven door has positive spring and spiral spring. Provisions made for water front. By removing front wall it will fit in its place in front of firebox. Large warming oven, with enamel drop door, well balanced. Cast brackets, electro-nickel plated.

Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Style	Each
A18B	18x18x12	41x28	6—8 inch	420	Square	$185.40
B19BR	18x18x12	46x28	6—8 inch	475	Reservoir	209.40

Either stove takes "Marvel" waterfront—Each $10.00

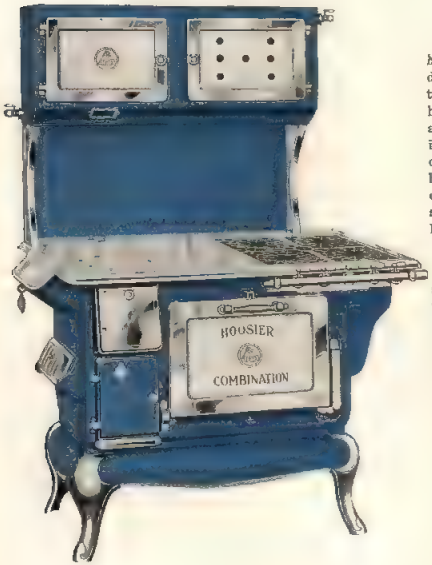
All carefully crated for shipping.

ENAMEL COMBINATION RANGES

Hoosier.

All Cast Iron.

Combination—Blue or Gray Enamel.



The latest and most modern improvement in Combination Range construction. Made in various designs, and colors, grey and blue enamel, nickel trimmed and regular finish. The gas ovens, one for baking and one for broiling, are at the proper height above the cooking surface. The coal baking oven is in the usual place, under the cooking surface. The cooking surface is a complete ground, or polished top, has eight holes, four for gas and four 8-inch lids for coal. The gas cooking equipment is the same as any similar range, one double burner, three four and one-half inch burners and simmer.

The gas bake oven and the gas broiler oven are of standard construction. The gas grill plates are in two sections and can be easily removed by lifting up and placing in two french plates with four lids, or four griddles for gas when desired. Both bake ovens are equipped with the latest improvement and accurate thermometers. Oven aluminized; have oven racks.

Attention is called to the fact that the gas and coal sections of this range are entirely independent. Neither interfere in any way with the operation of the other. This applies to the bake oven as well as the cooking top. Two complete ranges available at all times with coal or gas or both to be used at any time and use either one or both without making any changes. Ready at all times.

Gray Enamel.

No.	30GC
Cooking top, in.	46x28
Covers, in	4—8
Height from floor to cooking top, in.	32
Height overall, in.	65
Depth overall, in.	33
Width overall, in.	50
Fire box, in.	20
Pipe collar, in.	7
Gas and broiler oven, in.	18x16x11
Coal oven, in.	18x18x12
Shipping weight, lbs.	640
Each	$262.20

Blue Enamel.

No.	31BC
Cooking top, in.	46x28
Covers, in.	4—8
Height from floor to cooking top, in	32
Height overall, in.	65
Depth overall, in.	33
Width overall, in.	50
Fire box, in.	20
Pipe collar, in.	7
Gas and broiler oven, in.	18x16x11
Coal oven, in.	18x18x12
Shipping weight, lbs.	640
Each	$262.20

Either stove takes "Combination" waterfront—Each **$10.00**

All carefully crated for shipping.

JANNEY, SEMPLE, HILL & CO.

COMBINATION RANGES

Hoosier.

Nickel Trim.

This range is of the same construction and has same measurements as Nos. 30GC and 31BC, but is finished with nickel trim only as shown.

No. A32C—Each $213.60

Black Finish.

Same as No. A32C but without nickel trim. Finished in plain black.

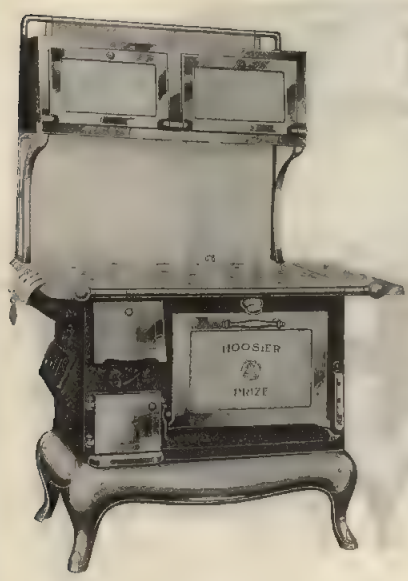
No. A34C—Each $200.00

Either Stove takes "Combination waterfront.
Each $10 00

All carefully crated for shipping.

Hoosier.

Prize—Square



These cast ranges are known for their superiority in quality of material, uniformity of design, fine finish, durability and service. Nothing has been left undone to make these cast ranges the finest made.

Special Hoosier Features.

Beautifully designed high closet. Smoke pipe is placed behind splasher back of range ,affording more cooking space. Round cornered sootless flues. Complete polished top. Detachable cast collar, air-tight, permitting polishing entire cast top. All centers and lids reinforced, allowance made for proper expansion and contraction. All doors are ground to air-tight fitting, giving perfect control of heat in oven.

Interlapping clinkerless duplex grate, for coal or wood. Heavy sectional linings, hot blast openings, made to withstand the most severe firing. Can be easily removed without nuts and bolts. Cast flue back, preventing creosote or rust. Large ash pan and ash chute. Combination drop fire and swing ash pit door. Oven indicator showing heat in oven. Aluminized oven with durable wire oven rack. Detachable towel bar. Finest smooth silvery triple-plated nickel. Firebox accurately correct in size, shape and weight. Beautifully enamel high closet, large warming oven, with enamel drop door, well balanced. Made for water fronts when desired. The enamel of these ranges is of the very highest quality will not chip or crack.

Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Each
A36	19x18x13	41½x25	6—8 inch	510	$162.10
D36	21x20x13	43 x27	6—9 inch	540	167.70

"A" series take No. 18 Prize waterfronts—Each .$10.00 "D" series take No. 20 Prize waterfronts—Each .$10.00

All carefully crated for shipping.

Hoosier.

Magic—Reservoir.

Beautifully designed enameled high closet with drop doors. Smokepipe is placed behind splasher back of range, affording more cooking space. Large enamel reservoir. Round cornered sootless flues. Cast iron body. Top in four sections, reinforced to prevent warping. French plate and short center over firebox. Large cooking surface. Complete polished top. Firebox properly proportioned and adapted to any fuel.

Heavy sectional linings, ventilated, held in place with lugs. Interlapping, clinkerless duplex grates, change from wood to coal and with quarter turn of crank automatically locks. The pouch feed door frame and lower poker door frame made in one piece. Aluminized oven with wire oven rack. Top oven plate ribbed to equalize heat in oven. Thermometer indicates acurate heat. Oven door has positive spring and spiral spring. Provisions made for water front. By removing front wall it will fit in its place in front of firebox. Large warming oven, with enamel drop door, well balanced. Cast brackets, electro-nickel plated.

Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Each
B23R	18x18x12	46x28	6—8 inch	475	$147.50

"Magic" waterfront for No. B23R stove—Each..... $10.00

All carefully crated for shipping.

Hoosier.

Rival—Square

For Coal or Wood

Hoosier Rival cast range is made of the highest grade material and workmanship. With smooth french plate top. Made in one size 8-18. For smooth design, fine finish, long life and service this range has met the instant approval of both dealer and housewife.

Beautifully designed high closet. Round cornered sootless flues. Body cast iron properly proportioned and adapted to any fuel.

Heavy sectional linings, ventilated, held in place with lugs. Interlapping, clinkerless duplex grate, center over firebox. Large cooking surface. Fire-iron. Detachable collar, air-tight, permitting polishing entire top when required. Top in four sections, reinforced to prevent warping. French plate, short change from wood to coal with quarter turn of crank automatically locks. The pouch feed, door frame and lower poker door frame made in one piece. Oven is square. Top oven plate ribbed to equalize heat in oven. Oven door, with positive spring latch and spiral spring.

Water Front—Provision is made for installing our cast iron hollow pin-extension water front. By removing front wall is fit in its place in front of firebox. Beautifully blue steel high closet, large warming over, with rolling door, well balanced. Cast brackets or sides, electro-nickel plated where shown.

Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Each
A103	18x18x12	41x28	6—8 inch	420	$95.30

Regularly furnished with Black Top. For polished top, add $5.50

"Rival" waterfront for No. A103 stove—Each..... $10.00

All carefully crated for shipping.

STEEL RANGES

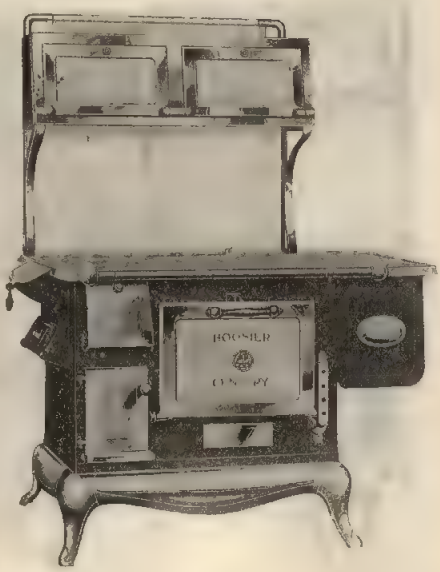
Hoosier.

Century—Reservoir.

The Hoosier Century is the range that has a national reputation of superiority in quality of material, uniformity of design, fine finish, ornamentation, durability, appearance and service. Nothing has been left undone to make this steel range the finest made and sold.

Beautifully designed high closet. Smoke pipe is placed behind splasher back of range, affording more cooking space. Closely hand riveted bodies made of two sheets heavy gauge steel, interlined with asbestos millboard, to retain the heat. Detachable. contact heating, copper reservoir. Round cornered sootless flues, lined with asbestos millboard, with extra reinforcement. Complete polished top. Bottom of oven protected with cast iron brace, securely bolted, will not break or buckle. French or key plates are interchangeable, reinforced and allowance made for expansion and contraction, easily replaced. All damper are constructed not exposed to the heat. All doors are ground to air-tight fitting to give perfect control of heat in oven.

Interlapping, clinkerless duplex grate, for coal or wood. All linings, grates, etc., are removed without nuts and bolts. Cast flue back will not be effected by creosote or rust. Large ash pan and ash chute. Combination drop fire and swing ash pit door. Oven thermometer indicates heat of oven accurately, for baking ,etc. Aluminized oven with wire oven racks. Detachable towel bar. Finest smooth silvery finished nickel, is easy to keep clean, and so made will not tarnish. Firebox accurately correct in size, shape and weight. All linings sectional, heavy with hot blast openings and air spaces behind them, to prevent warping. Nor rods o ninside to burn off. Beautiful enamel high closet, large warming oven, with enamel drop doors well balanced. Cast extension for wood. Cast iron oven plate. All ranges made to receive water fronts when desired. The enamel of these ranges are of the highest quality and will not chip or crack.

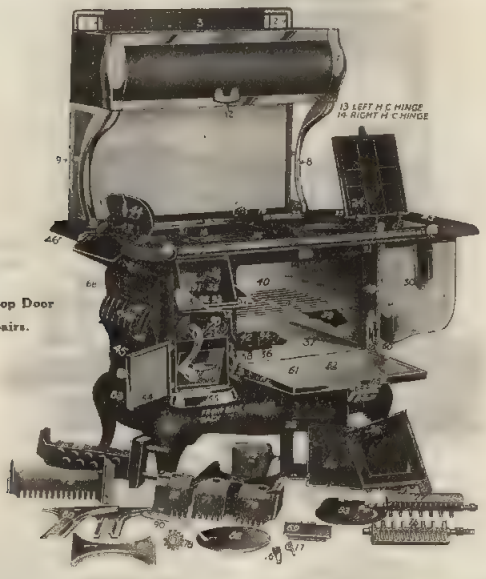


Nos.	Oven, in.	Top, in.	Covers	Weight, lbs.	Each
A51R	18x20x13	47½x27½	6—8 inch	540	$171.20
D51R	20x20x13	49x27½	6—9 inch	555	173.80

"Century" waterfront for either of above Nos.—Each..... $10.00

All carefully crated for shipping.

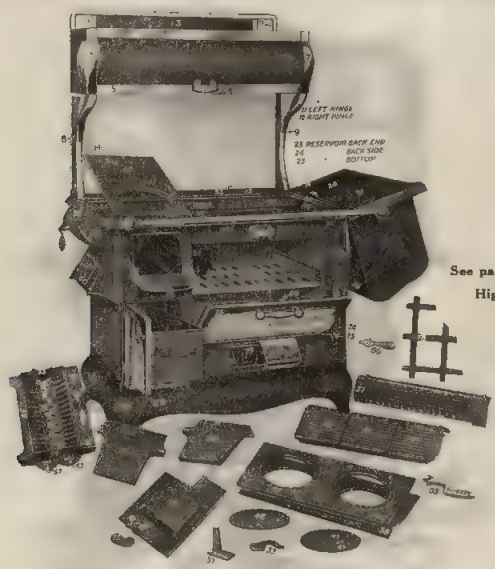
NAMES OF PARTS OF HOOSIER PRIZE CAST RANGES



See page 986 for Drop Door High Closet Repairs.

1. Left High Closet Fender Closet
2. Right High Closet Fender Corner
3. High Closet Fender
4. High Closet Upper Nickel Strip
5. High Closet Lower Nickel Strip
6. Left Front Corner Column
7. Right Front Corner Column
8. Right High Closet Brackets
9. Left High Closet Brackets
10. High Closet Door
11. High Closet Splasher Back
12. High Closet Door Handle
13. Left High Closet Hinge
14. Right High Closet Hinge
15. Damper Handle
16. Damper Finger
17. Damper Lug
18. Rolling Damper
19. Collar Top
20. Towel Bar
21. Towel Bar Brackets
22. Right End Top
23. Reservoir Top
24. Long Reservoir Cover
25. Short Reservoir Cover
26. Reservoir Back End
27. Reservoir Back Side
28. Reservoir Bottom
29. Copper Tank
30. Reservoir Front End
31. Flue Back
32. Center Post
33. Top Oven Plate
34. Upper Front Oven Plate
35. Lower Front Oven Plate
36. Left Bottom Oven Plate
37. Right Bottom Oven Pate
38. Right Side Oven Plate
39. Right End
40. Main Back
41. Oven Rack
42. Main Bottom
43. Pouch Door
44. Pouch Door Slide
45. Left End
46. Left End Top
47. Poker Door
48. Poker Door Side
49. Open Side
50. Grate Lock
51 Grate Plate
52 Fire Door Lining
53 Fire Door
54. Ash Door
55 Ash Catch
56. Crank Shaker
57 Ash Pan
58. Left Oven Door Hinge
59 Right Oven Door Hinge
60. Oven Door Spring
61. Oven Door Lining
62 Thermometer
63. Oven Door Handle
64. Latch Framé
65. Latch Bolt
66. Latch Catch
67. Oven Door
68 Name Plate
69. Clean-out
70. Right Section Back Wall
71. Middle Section Back Wall
72. Left Section Back Wall
73. Front Wall
74. Left End Wall
75. Right End Wall
76. Long Grate Bar
77. Short Grate Bar
78. Cog Wheel
79. Water Front
80. Cut Center
81. Short Center
82. Lid
83 Section Cover Center
84. Section Cover Middle
85. Section Cover Outside
86. Front Base Strip
87. Back Base Strip
88 Short Base Strip
89. Leg
90. Lid Lifter
91. Left Grate Hanger
92. Right Grate Hanger
93. Front Grate Cap
94. Flue Strip

NAMES OF PARTS OF THE HOOSIER CENTURY RANGE



See page 986 for Drop Door High Closet Repairs.

1. Left High Closet Fender Corner
2. Right High Closet Fender Corner
3. High Closet Fender
4. High Closet Upper Nickel Strip
5. High Closet Lower Nickel Strip
6. Left Front Corner Column
7. Right Front Corner Column
8. Left High Closet Bracket
9. Right High Closet Bracket
10. High Closet Door Handle
11. Left High Closet Hinge
12. Right High Closet Hinge
13. High Closet Door
14. High Closet Spalsher Back
15. Collar Top
16. Left End Top
17. Front Top
18. Right End Top
19. Reservoir Top
20. Reservoir Short Cover
21. Reservoir Long Cover
22. Reservoir Front End
23. Reservoir Back End
24. Reservoir Back Side
25. Reservoir Bottom
26. Copper Tank
27. Towel Bar Brackets
28. Towel Bar
29. Right End
30. Top Extension
31. Damper
32. Damper Handle
33. Damper Finger
34. Wood Extension
35. Pipe Stop
36. Top Oven Plate
37. Center Post
38. Right French Plate
39. Middle French Plate
40. Left French Plate
41. Short Center
42. Lid
43. Sectional Lid Center
44. Sectional Lid Middle
45. Sectional Lid Outside
46. Right Sectional Back Wall
47. Middle Sectional Back Wall
48. Left Sectional Back Wall
49. Left End Wall
50. Right End Wall
51. Front Wall
52. Grate Frame
53. Back Grate Cap
54. Front Grate Cap
55. Long Grate Bar
56. Short Grate Bar
57. Cog Wheel
58. Pouch Door
59. Pouch Front
60. Poker Door
61. Poker Door Register
62. Long Front
63. Fire Door
64. Fire Door Lining
65. Ash Door
66. Ash Catch
67. Ash Pan
68. Latch Catch
69. Oven Door Lining
70. Oven Door Handle
71. Thermometer
72. Oven Door Enamel Panel
73. Oven Door Frame
74. Hinge Spring
75. Oven Door Hinge Cover
76. Clean-out Door
77. Clean-out Door Frame
78. Oven Bottom Brace
79. Flue Strip
80. Long Base Strip
81. Short Base Strip
82. Foot
83. Oven Rack
84. Back Flue
85. Crank Shaker
86. Reservoir Clamp

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

DOUBLE TUB POWER

For use with Gasoline Engine

The Dexter "Double Tub" has complete washing gearing in two tubs, an improved power wringer that swings to operate in any desired position, and steel bench with room for two rinse tubs. It washes, rinses and wrings all at once—cuts washing time in two.

SPECIFICATIONS

Tubs—Selected Florida cypress, heavy double covers, corrugated inside and bottom to assist washing process.

Wringer—Swings to operate in any desired position. Equipped with reverse lever, safety release, tilting drain board, and Lovell five-year quality rolls.

Bench—Made entirely of steel channels, angles and bars; folding shelf is of same sturdy construction.

Shafting—Cold rolled, ⅞-inch diameter, with bronze bushings in main bearings.

Information—Floor space required, 27x47 inches. Shipping weight, crated, 275 pounds. Proper speed, 175 R. P. M.

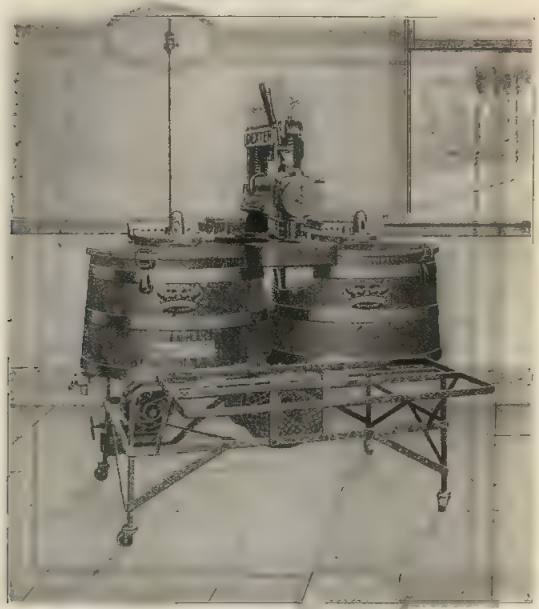
Fourteen-inch pulley is regular equipment. On special orders, 9-inch, 12-inch or 16-inch pulley can be furnished.

Model 2P—One in a crate. Each..... $65.00
Model 1P—With washing mechanism in one tub only, otherwise same as Model 2P. Each..... 60.00

DEXTER WASHING MACHINES

DOUBLE TUB ELECTRIC

Complete with ¼ H. P. Motor



This model has complete washing gearing in two tubs, and a wringer that swings so as to work at any point around its central bearing—all electrically driven. The folding steel shelf gives room for two rinse tubs. Model 2E washes, rinses and wrings by electric power—all at the same time—will do a large family washing in less than two hours.

SPECIFICATIONS

Tubs—Selected Florida cypress, heavy double cover, corrugated inside and bottom, three heavy steel hoops.

Wringer—Improved swinging design, equipped with safety release, reverse lever, tilting drain board, ball bearings, and five-year quality rolls.

Beach—Made entirely of steel channels, angles and bars, folding shelf is of same sturdy construction.

Shafting—Cold rolled steel, ⅞-inch diameter, with bronze bushings and auto ball bearings.

Motor—Emerson ¼ H. P., 1800 R. P. M., Dexter design, with water-proof case. Special windings for heavy duty and overload start. Comes complete with heavily insulated cord and attachment plug.

Information—Floor space required 27x47 inches. Shipping weight, crated, 336 lbs. Outside dimensions of crate, 28x39x52 inches.

Model 12E—One in a crate. Each..... $99.00

Model 11E—With mechanism in one tub only, otherwise same as model 12E. Each..... 87.50

‡If wanted with 220V alternating current, 220V direct current, or 32V farm lighting system.

Electric washers will be equipped with motors for any ordinary current, either **alternating** or **direct**, at above prices. For motors requiring special winding, a small additional charge is required.

Always specify **current** and **voltage** in ordering **electric washers.**

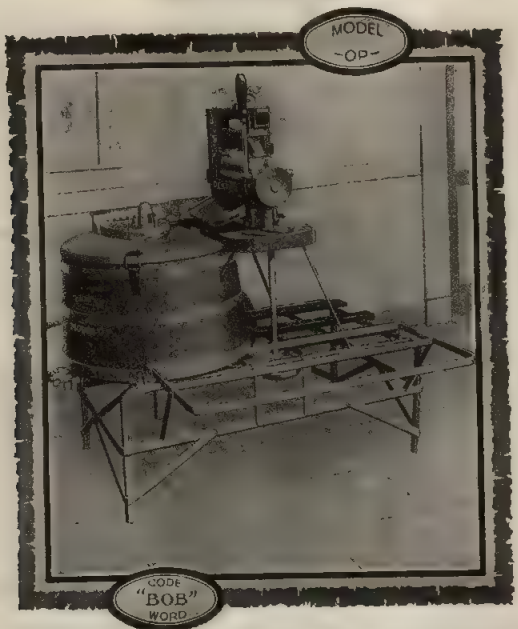
Items marked thus ‡ not carried in stock. Shipped direct from factory.

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

OPEN PLATFORM POWER

For use with Gasoline Engine



This sturdy power washer has exactly the same steel frame that is used on the double machines. The main bench supports a standard washing tub, complete with power gearing, and gives room for one large rinsing tub. The folding steel shelf at the side holds two rinse tubs or clothes baskets. A swinging ringer of latest improved design operates in any desired position.

SPECIFICATIONS

Tub—Made of selected Florida cypress, finished in natural color, bound with three heavy steel hoops—double steam-proof cover, corrugated inside.

Wringer—Improved swinging type, equipped with the celebrated Lovell five-year quality rolls, patent safety release, tilting drain board. All gears enclosed by metal shields.

Bench—Made of heavy channel steel, extremely rigid and durable; folding shelf of same construction.

Shafting—Cold rolled, ⅞-inch diameter, bearings have bronze bushings.

Information—Floor space required, 27x47 inches. Shipping weight, crated, 230 pounds. Outside dimensions of crate, 28x39x52 inches.

Model OP—One in a crate. Each $50.00

DEXTER WASHING MACHINES

OPEN PLATFORM ELECTRIC

Complete with ½ H. P. Motor

Model 10E is of the same construction, and has the same sturdy steel supporting bench and folding shelf as the power washer shown on the opposite page but is furnished complete with ½ H. P. electric motor, castors and equipped for operation by electricity, instead of gasoline engine It has the standard large capacity Dexter tub, and is fitted with a convenient Dexter swinging wringer, electrically driven.

SPECIFICATIONS

Tub—Made of selected Florida cypress, finished in natural color, bound with three heavy steel hoops, double steam-proof cover, corrugated inside.

Wringer—Improved swinging type, equipped with the celebrated Lovell five-year quality rolls, patent safety release, tilting drain board. All gears enclosed by metal shields.

Bench Made of heavy channel steel, extremely rigid and durable, folding shelf of same construction.

Shafting—Cold rolled, ⅞-inch diameter, with bronze bushings, and auto ball bearings..

Motor—Emerson ½ H. P., 1750 R. P. M., Dexter design, with water-proof case. Comes complete with heavily insulated cord and attachment plug.

Information—Floor space required, 26x46 inches. Shipping weight, crated, 275 pounds. Outside dimensions of crate, 28x39x52 inches.

Model 10E—One in a crate. Each..... $87.50

Model 10E for 32V farm lighting system; same price as above.

‡If wanted with 220V alternating current or 220V direct current.

Electric washers will be equipped with motors for any ordinary current, either **alternating or direct, at above** prices. For motors requiring special winding, a small additional charge is required.

Always specify **current and voltage** in ordering **electric washers.**

Items marked thus ‡ not carried in stock. Shipped direct from **factory.**

1406

DEXTER WASHING MACHINES

DUCHESS POWER

For use with Gasoline Engine.

The Duchess is a marvel of sturdy and compact designing. Its washing capacity equals that of any single tub machine, yet it requires but little space It is built to stand up under the heaviest washing work but it is not heavy nor clumsy in any part. The reversible, power wringer that swings to operate in any desired position; folding bench for holding rinse tubs; the easy, single-lever control and the totally enclosed gears; all contribute to give the Duchess a degree of efficiency unapproached among washers of this type and to make it decidedly superior from a standpoint of safety and smooth appearance.

SPECIFICATIONS

Tub—Made of selected Florida cypress, a natural water wood, admirably adapted to washing service. The lids are double thickness, staves and bottom are corrugated inside to assist the cleansing process.

Wringer—Improved swinging design, with five-year quality rolls, quick action safety release and tilting drain board. Wringer moves to operate in any position and is reversible by means of a small lever.

Bench—Made of heavy steel channels and angles. Folding shelf under wringer of same construction, holds one rinse tub or clothes basket.

Shafting—Cold rolled steel, ¾-inch diameter, much heavier than shafting ordinarily used on bench washers.

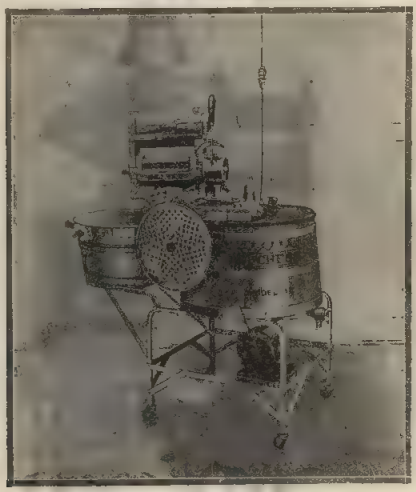
Information—Floor space required, 21x25 inches. Proper speed for drive pulley, 275 R. P. M. A 9-inch pulley is regularly furnished; 12-inch pulley furnished if specified. Shipping weight, crated, 185 pounds. Outside dimensions of crate, 26x39x28 inches.

Model 3P—One in a crate. Each. $45.00

DEXTER WASHING MACHINES

DUCHESS ELECTRIC

Complete with ⅛ H. P. Motor



The Duchess has everything that an up-to-date electric washing machine should have. It stands on a sturdy frame made of channel steel which has a folding shelf attached beneath the wringer for holding a rinse tub or clothes basket. The reversible, power wringer is pivoted at a central point so it can be swung to operate at any desired position. Heavy swivel castors make it very easy to push the washer any place and to put it away when the work has been completed. A drain spout is attached through the bottom of the tub by means of which the water can be taken out without lifting, tilting or splashing.

SPECIFICATIONS

Tub—Made of selected Florida cypress, corrugated inside, lid double thick, steam-proof and heat retaining. Metal parts electro galvanized.

Wringer Improved swinging design, with five-year quality rolls, quick action safety release, tilting drain board and ball bearings. This is easily swung to any desired position and easily reversible.

Bench Made of heavy steel channels, angles and bars; folding shelf of same construction.

Shafting—Cold rolled steel, ⅞-inch diameter, with ball bearings and bronze bushings to reduce friction and increase durability.

Motor—⅛ H. P. Emerson, 1750 R. P. M., totally enclosed to protect windings from water; complete with heavily insulated cord and plug for standard light socket.

Information—Floor space, 21x25 inches Shipping weight, crated, 215 pounds. Outside measurements of crate, 26x39x28 inches.

Model 3E—One in a crate. Each..... $77.50

Model 3E for 32V farm lighting system; same price as above.

‡If wanted with 220V alternating current or 220V direct current.

Electric washers will be equipped with motors for any ordinary current, either **alternating** or **direct**, at above prices. For motors requiring special winding, a small additional charge is required.

Always specify **current** and **voltage** in ordering **electric washers.**

Items marked thus ‡ not carried in stock. Shipped direct from factory.

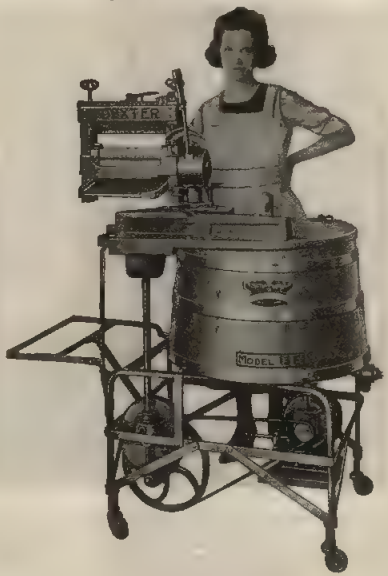
1408

DEXTER WASHING MACHINES

SINGLE TUB ELECTRIC

Complete with 1-5 H. P. Motor.

This Dexter Single Tub Electric has every modern convenience that should be shown on an up-to-date electric washing machine. It differs rom the "Duchess" as all of the driving parts are now within the frame. Belt drive is now entirely under the tub. It has a large self-draining tub mounted on a sturdy bench of channel steel. The reversible wringer is pivoted at a central point so it can be swung to work in any position. A folding, steel shelf is provided for the rinse tub. Heavy swivel castors make it easy to move this washer from one place to another or put it away when its work has been completed.



Equipped with machine cut gears. Every tooth is accurate to the one-thousandth part of an inch and the mesh of the mechanism is so perfect that smoothness of operation and unusual durability is assured.

One lever gives complete control. This governs the action of the power driven wringer, makes it run forward, backward or stops it instantly with a very slight movement. Action of the washing parts in the tub is controlled automatically by the lid. When this is lifted the washing agitator stops immediately. As soon as the lid is closed, this goes to work again.

Smooth and Silent in Action.

The tub is standard capacity and made of extra heavy, selected Cypress—the wood eternal. Many years of experience have proven conclusively that Cypress has peculiar qualities which make it unusually desirable for washing machine tubs. All Dexter tubs are bound with three, heavy, steel hoops and are provided with steam-proof lids of double thickness. Tubs are finished in their natural color with three coats of special washing machine varnish. The hoops and castings are lacquered with gold bronze.

SPECIFICATIONS

Tub—Self-draining, extra heavy tub, made of selected Florida Cypress, heavy steam-proof, double covers, corrugated inside and bottom to assist the washing process. Securely bound with three heavy steel hoops.

Bench—Made entirely of steel channels, angles and bars; folding shelf is of same sturdy construction.

Wringer—Improved swinging design, equipped with ball bearings, patent safety release single lever control, reversible tilting water board, Lovell five-year quality rolls with bicycle bearings.

Shafting—Cold rolled steel ⅞ inch diameter. Main bearing equipped with bronze bushings, automobile ball bearings and oilless lignum bearings.

Motor—Emerson 1-5 H. P., 1800 R. P. M., special Dexter designed with ventilated, water-proof case. Special windings for heavy duty and over-load start. The motor comes complete with heavy insulated cord and attachment plugs.

Information—Floor space required 21x25 inches. Shipping weight, crated, 235 lbs. Outside dimensions of crate, 26x39x28 inches.

Model 13E—One in a crate. Each..... $77.50

‡If wanted with 220V alternating current or 220V direct current.

Electric washers will be equipped with motors for any ordinary current, either **alternating** or **direct**, at above prices. For motors requiring special winding, a small additional charge is required.

Always specify **current** and **voltage** in ordering **electric washers.**

All items marked thus ‡ not carried in stock, but shipped direct from factory.

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

1408A

POWER

For use with Gasoline Engine

The Dexter power, stave leg model, is highly efficient in its work—handsome and compact in design and very durable in construction. The driving mechanism is entirely covered by smooth metal shields and is set on the back of the machine where it is out of the way of the operator. This machine is equipped with standard capacity tub and an improved stationary wringer with reinforced malleable frame, heavily galvanized. There is no exposed machinery and it is so easy to understand, so simple in its operation that any child can handle it without danger or difficulty.

SPECIFICATIONS

Tub—Made of selected Florida cypress, rich in natural preserving oils, stave legs, steam-proof double cover, finished in natural color, with three coats of special washing machine varnish.

Wringer—Improved stationary type, reinforced malleable frame heavily galvanized, Lovell three-year quality rolls; controlled by one lever, which starts, stops or reverses the rolls instantly at the will of the operator.

Bearings—The large drive pulley runs on ball bearings. All bearings are designed for durability. Those subject to the hardest work are fitted with bronze bushings.

Information—Floor space required, 26x28 inches. Shipping weight, crated, 140 pounds. Proper operating speed, 275 R. P. M. Outside dimensions of crate, 27x31x42 inches.

Model DP—One in a crate. Each..... $37.50

1408B

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

ELECTRIC

Complete with ⅛ H. P. Motor

Home washing is very easily handled when this machine is used. The wringer and washer are both electrically driven and the gearing is so arranged that either may be run separately or both may be operated at the same time. This feature makes it possible to wring back from the rinse tub while washing is in process and a great deal of time is saved by so doing. One lever gives complete control of the wringer, stops, starts or reverses it instantly. Action of the washing parts is controlled by the lid. When this is opened the dasher stops automatically. When the lid is closed the dasher starts working again. All moving parts covered by smooth metal cases. This model is equipped with an improved, stationary wringer with galvanized malleable frame.

SPECIFICATIONS

Tub—Made of selected Florida cypress, stave legs, corrugated inside. Cover is steam-proof. Tub is bound with heavy steel hoops.

Wringer—Improved stationary type, Lovell five-year quality rolls, heavily galvanized metal frame. It is controlled by a single lever—quickly started, stopped or reversed.

Bearings—Fitted with bronze bushings where subject to heavy wear. The large drive pulley runs on ball bearings.

Motor—Emerson ⅛ H. P., with special windings for overload duty. Equipped with 10 feet of insulated cord and plug to fit in lamp socket.

Information—Floor space required, 26x28 inches. Shipping weight, crated, 170 pounds. Outside dimensions of crate, 27x31x42 inches.

Model DE—One in a crate. Each $62.50

‡If wanted with 220V alternating current, 220V direct current, or 32V farm lighting system.

Electric washers will be equipped with motors for any ordinary current, either **alternating** or **direct**, at above prices. For motors requiring special winding, a small additional charge is required.

Always specify **current** and **voltage** in ordering **electric washers**.

Items marked thus ‡ not carried in stock, but shipped direct from factory.

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

1408C

CLIMAX POWER

For use with Gasoline Engine.

Every part of the Climax Power Washer is designed for heavy duty in home laundry work. Every bearing is long and strong—every moving part is capable of carrying a heavy overload. This labor-saving machine has an improved swinging wringer, its gears are covered with smooth metal shields, which make it impossible for the operator to be injured or for clothes to be soiled which are going through the washing process. It is so designed that the belt and driving pulley are on the back of the washer, entirely out of the way of operator.

SPECIFICATIONS

Tubs—Made of selected Florida cypress, with extended stave legs and steam-proof double covers. Inside of bottom and sides is corrugated to assist the washing process. Finished in the natural color with three coats of special machine varnish.

Wringer—Lovell five year quality swings to operate in any position. Equipped with tilting drain board and safety release, which opens rolls instantly with a touch on the lever.

Gearing—Metal parts subject to strain are made of steel and malleable iron. Gear teeth are machine cut—shafting ¾-inch diameter.

Information—Floor space required, 34x32 inches. Shipping weight, crated, 160 pounds. Outside dimensions of crate, 27x38x40 inches.

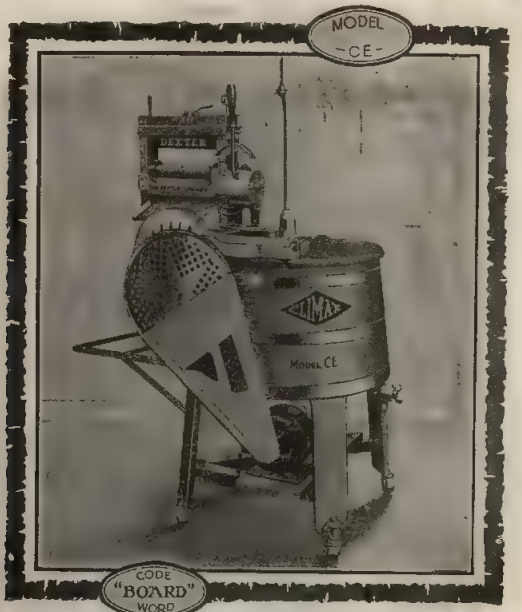
Model CP— One in a crate. Each $43.00

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

CLIMAX ELECTRIC

Complete with ½ H. P. Motor



The Climax Electric Washer is equipped with every convenient feature and shows all of the latest improvements in washing machine designing. It is very easy to handle and is built so well that it will stand many years of hard service. Large ball bearing swivel castors make it possible to move the Climax easily -a drain spout which attaches through the bottom of the tub takes out all of the waste water without muss or splash and the tilting water board beneath the wringer rolls carries the waste water from wringing into a tub on either side without spilling a drop. An improved swinging wringer moves to work over rinse tubs or clothes baskets arranged about the washer so that no heavy lifting is necessary.

SPECIFICATIONS

Tub—Made of selected Florida cypress, extended stave legs, corrugated inside. Lid is double thick to make it steam-proof and heat retaining. Finished in natural color with three coats of special washing machine varnish.

Wringer—Improved Dexter swinging type—operates in any position, and equipped with safety release lever; five-year quality rolls, ball bearings and tilting drain board.

Motor—Emerson ½ H. P., with water-proof case and special windings for heavy overload. Comes complete with heavily insulated cord, with attachment plug.

Information—Floor space required, 24x32 inches. Shipping weight, crated, 200 pounds. Outside dimensions of crate, 27x38x40 inches.

Model CE—One in a crate. Each..... $72.50

‡If wanted with 220V alternating current, 220V direct current, or 32V farm lighting system.

Electric washers will be equipped with motors for any ordinary current, either **alternating or direct, at above prices.** For motors requiring special winding, a small additional charge is required.

Always specify **current** and **voltage** in ordering **electric washers.**

Items marked thus ‡ not carried in stock. Shipped direct from factory

JANNEY, SEMPLE, HILL & CO.

DEXTER WASHING MACHINES

1408E

HAND POWER

Power Pulley for Gasoline Engine Free

This machine is equipped with the Dexter "double levers," the most important labor-saving invention that has ever been shown on a hand power washing machine. Referring to the illustration, you will note that our double lever makes it possible to put the fulcrum bearing on the lower hoop. This gives a five to one lever proportion in favor of the operator and makes the washing work at least fifty per cent easier than on single lever machines. Other exclusive features that make this machine especially desirable are: The detachable power pulley; the solid, "No Tear" dolly; the adjustable lifting cap, by means of which the position of the dolly in the clothes can be changed while washing is in process without stopping the machine.

SPECIFICATIONS

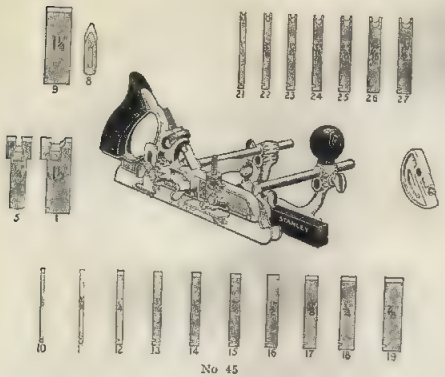
Tubs—Made of selected Florida cypress, bound with three heavy hoops, stave legs. Double covers, inside of staves and bottom corrugated. Finished in the natural color of the wood with three coats of washing machine varnish. Legs and wringer box are thoroughly braced.

Gearing—Machine cut gears mounted on a unit, main frame below the tub insure smooth, quiet action and great durability. The fly wheel runs on ball bearings. Metal parts subject to strain are made of steel or malleable iron.

Information—Floor space required, 26x28 inches. Shipping weight, crated, 94 pounds. Outside dimensions of crate, 22x24x33 inches.

Model DH—One in a crate. Each..... $18.00

STANLEY "FORTY-FIVE" PLANE



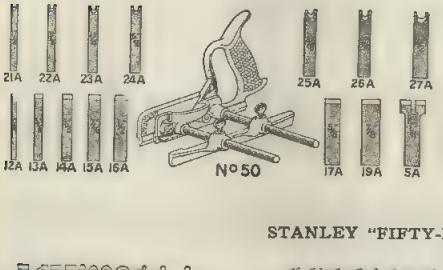
No 45

This Plane combines seven tools in one, as follows: (1) Beading and Center Beading Plane; (2) Plow; (3) Dado; (4) Rabbet and Filletster; (5) Match Plane; (6) Sash Plane; and (7) A Slitting Plane. It has two principal parts, a Main Stock and a Sliding Section. The Main Stock carries the handle, cutter adjustment, a slitting tool, depth gauge, and forms a bearing for one edge of the cutter. The Sliding Section slides on two arms secured in the stock and has a bearing for the other edge, allowing cutters of different widths to be used. A Fence also slides on these arms for use when working as a plow, beader or filletster, to gauge the distance from the cutter to the edge of the board, and to keep the cutter at right angles to same. When used as a filletster, the fence slides under the bottom of the plane and determines the width of cutter exposed to the work. The plane is fitted with spurs for use across the grain, etc., and can be used either right or left hand. Furnished with a Patent Cam Rest for attaching to the front arm between the sliding section and the fence to prevent the fence from sagging when beading at a distance from the edge of the board. In certain work the Cam Rest should be attached to the rear arm to prevent plane from rocking. Nickel Plated Metal Parts, Rosewood Handle, Knob and Fence.

No. 45—With 21 Cutters as per cut . . Each, $19.88

Packed—One in a Box, with Cutters.

STANLEY PLOW BEADING AND MATCHING PLANE

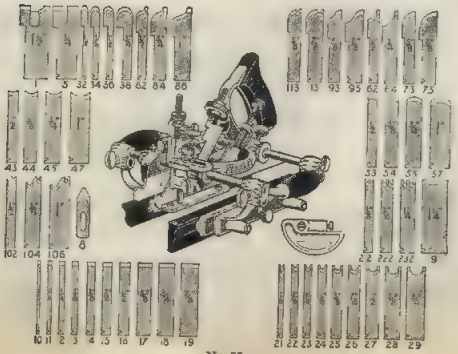


This is a very handy tool for light work. It consists of a Main Stock, carrying a spur and a depth gauge, and forming a support for one side of the cutter; a Sliding Section carrying a spur and forming a support for the other side of the Cutter, and a fence with a five inch adjustment. The Cutters comprise 7 plow and dado bits, ¼, 5/16, ⅜, 7/16, ½, ⅝ and ¾ inch; 7 beading tools, ⅛, 3/16, ¼, 5/16, ⅜, 7/16 and ½ inch; and a ¼ inch tonguing tool. Made entirely of Metal Nickel Plated.

No. 50—9¼ inches long, with 15 Cutters as per cut . . . . . Each, $10.86

Packed—One in a Box, with Cutters.

STANLEY "FIFTY-FIVE" PLANE



No. 55

This Plane combines a main stock and a sliding section so arranged that cutters of different widths may be used. The Main Stock carries the various cutters firmly clamped to it by the cutter bolt. The Sliding Section has a Patent Adjustable Bottom, vertically adjustable by means of a differential screw. The Auxiliary Center Bottom can also be used as a support when needed. With the sliding section and the auxiliary center bottom it is possible to use cutters of any shape. Furnished with a Patent Cam Rest which can be fastened to either arm outside or between the plane and the fence to keep the plane level, or when used on the back arm in combination with the auxiliary center bottom it keeps the plane from rocking. Nickel Plated Metal Parts, Rosewood Handle and Fences.

No. 55—With 52 Cutters as per cut. . . . . . Each, $39.08

Packed—One in a Box, with Cutters.

BUHL BLOCK PLANES

No. B101.

Non-Adjustable, Japanned Trimmings.

	Each
No. B101—3½ inches long, 1 inch Cutter.....	$0.50

Packed—One in a Box.

No. B102.

Non-Adjustable, Japanned Trimmings.

	Each
No. B102—5½ inches long, 1¾ inch Cutter.....	$1 00

Packed—One in a Box.

No. B110.

Non-Adjustable, Japanned Trimmings, Black Wood Knob.

	Each
No. B110—7½ inches long, 1¾ inch Cutter.....	$1.40

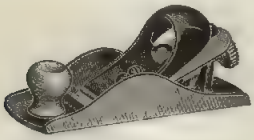
Packed One in a Box.

No. B103.

Lever Adjustment, Japanned Trimmings. For light work.

	Each
No. B103—5½ inches long, 1¾ inch Cutter....	$1 40

Packed—One in a Box.



No. B220.

Screw Adjustment, Japanned Trimmings, Rosewood Knob. The Cutter is fastened by a Lever and Cam and is adjustable lengthwise.

	Each
No. B220—7½ inches long, 1¾ inch Cutter.....$2.00	

Packed—One in a Box.

Nos. B9½ and B15.

Adjustable, Japanned Trimmings, and as otherwise described below.

	Each
No. B9½—6 inches long, 1¾ inch Cutter.....$2.70	
No. B15 —7 inches long, 1¾ inch Cutter..... 2.90	

Packed—One in a Box.

Note.—Nos. B9½, B15, B65 and B18 Planes have Cutters adjustable both lengthwise and laterally, as well as Adjustable Throats. The "Handy" feature on the sides forms a convenient grip for the hand and gives a feeling of security to the workman

No. B65.

Adjustable Low Angle Block Plane, Nickel Trimmings. The Cutter in this Plane is set at a very low angle, which is a great advantage in working across the grain.

	Each
No. B65—7 inches long, 1¾ inch Cutter.....$3.50	

Packed—One in a Box.

No. B18.

Knuckle Joint, Nickel Trimmings. The Knuckle Joint in the cap of this Plane makes it a lever, too, and, placing the cap in position, will also clamp the Cutter in its seat.

	Each
No. B18—6 inches long, 1¾ inch Cutter.....$3.10	

Packed—One in a Box.

BAILEY ADJUSTABLE BLOCK PLANES

Nos. 9½ and 15

Adjustable, with Japanned Trimmings.

No. 9½—6 inches long, 1⅝ inch Cutter.....Each, $2.90
No. 15—7 inches long, 1⅝ inch Cutter.....Each, 3.08

Packed—One in a Box.

Each Bailey Block Plane has an Adjustable Throat Opening, a Lateral Adjustment, and the "Handy" feature, which gives the workman a more secure grip on the Tool.

Nos. 18 and 19.

Knuckle Joint. The Knuckle Joint in the Cap of this Plane acts as a lever. Placing the Cap in position, clamps the Cutter securely to its seat. Has Bailey and Lateral Adjustments, "Handy" feature, Adjustable Throat and Nickel Trimmings.

No. 18—6 inches long, 1⅝ inch Cutter.....Each, $3.82
No. 19—7 inches long, 1⅝ inch Cutter.....Each, 4.08

Packed—One in a Box.

STANLEY ADJUSTABLE PLANES

BELT MAKER'S PLANE

No. 11.

Designed for chamfering down the ends or laps of a Belt before fastening them together; also for repairing Belts Has Adjustable Throat, Double Hardwood Handle and Japanned Trimmings. Cutter is adjustable endwise by screw.

No. 11—5¾ inches long, 2⅜ in. Cutter,.....Each, $3.48

Packed—One in a Box.

CARRIAGE MAKERS' RABBET PLANE

Nos. 10½ and 10.

Especially adapted for the heavy framing required in mining work, carriage and wagon building, or in any work of similar nature. Double Cutter adjustable both endwise and sidewise. Rosewood Handles and Knobs.

No. 10½— 9 in. long, 2⅛ in. Cutter.....Each, $8.78
No. 10 —13 in. long, 2⅛ in. Cutter.....Each, 8.16

Packed—One in a Box.

BULL NOSE RABBET PLANE

No. 75.

This Plane will be found very useful for working close up into corners or other difficult places. The mouth can be adjusted for different widths by means of the set screw on top of the Plane, which holds the two sections together. Japanned Trimmings

No. 75—4 inches long, 1 inch Cutter.....Each, $0.94

Packed—One in a Box.

SIDE RABBET PLANE

No. 98. No. 99.

Very convenient for side-rabbeting and trimming dados, mouldings and grooves of all sorts. A reversible nose-piece will give the Tool a form by which it will work close up into corners when required; 4 inches long; ⅛ inch Cutter; Nickel Trimmings; Rosewood Knobs.

No. 98—Right Hand.....Each, $2.80
No. 99—Left Hand.....Each, 2.80

Packed—One in a Box.

CABINET MAKERS' RABBET PLANE

No. 90.

For fine cabinet or other work where extreme accuracy is required. The sides and bottom being square with each other, the Plane will lie perfectly flat on either side, and can be used right or left. Cutters adjustable endwise. Has Adjustable Throat, Nickel Trimmings and "Handy" feature.

Nos 92 and 93.

No. 90—Bull Nose Pattern, 4 inches long, 1 inch Cutter.....Each, $5.12

Packed—One in a Box.

No. 92—5½ inches long, ¾ in. Cutter.....Each, $5.12
No. 93—6½ inches long, 1 in. Cutter.....Each, 6.12

Packed—One in a Box

EDGE TRIMMING PLANE

No 95

For trimming or smoothing the ends of boards, for a square or close fit. Has a right angle rest or guide from the cutter edge, and the Cutter works on a skew, giving an easy shaving cut. The rest or guide has two screw holes for attaching wood blocks of various bevels to enable the user to make a slanting cut. Japanned Trimmings.

No. 95—6 inches long, ⅞ inch Cutter.....Each, $2.40

Packed—One in a Box.

CABINET MAKERS' EDGE PLANE

No. 97.

A useful Tool for piano makers and all cabinet workers, for trimming inside work where space prevents the use of any other Plane. The Cutter rests on a solid bed practically its entire length and as the cutting edge is at the extreme end it gives the Tool the form of a Chisel. Cutter is adjustable endwise. Has Japanned Trimmings and Rosewood Knob

No. 97—10 inches long, 2⅛ in. Cutter.....Each, $5 60

Packed—One in a Box.

BUHL ADJUSTABLE WOOD PLANES

Buhl Planes are made to meet the demands of those mechanics and others who prefer the old type of **heavy taper cutters** or "laid irons" as illustrated below.
Buhl Planes have cutters adjustable lengthwise and laterally, and are made with wood bottoms, or iron bottoms; iron bottom planes are either smooth or corrugated as desired.

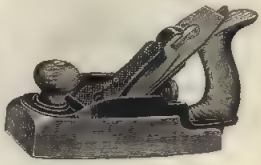
SMOOTH

Nos. B22 and B24.

	Each
No. B22—Smooth, 8 in., 1¾ in. Cutter.....	$3.25
No. B24—Smooth, 8 in., 2 in. Cutter.....	3.45

Packed—One in a Box.

HANDLED SMOOTH



Nos. B35 and B36

	Each
No. B35—Handled Smooth, 9 in., 2 in. Cutter	$4.10
No. B36—Handled Smooth, 10 in., 2⅜ in. Cutter	4.50

Packed—One in a Box

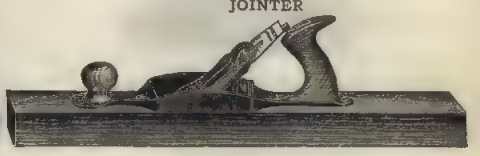
JACK AND FORE

Nos. B26 to B28.

	Each
No. B26 —Jack, 15 in., 2 in. Cutter.....	$3.65
No. B27½—Jack, 15 in., 2⅛ in. Cutter	4 30
No. B28 —Fore, 18 in., 2⅜ in. Cutter.....	4.50

Packed—One in a Package.

JOINTER



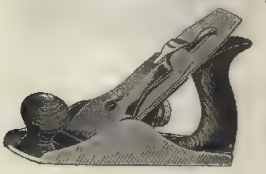
Nos. B31 and B32.

	Each
No. B31—Jointer Plane, 24 in., 2⅜ in. Cutter ..	$4 85
No. B32—Jointer Plane, 26 in., 2⅜ in. Cutter...	5.25

Packed—One in a Package.

BUHL ADJUSTABLE IRON PLANES

FLAT BOTTOM



Nos. B2 to B4½.

	Each
No. B2 —Smooth, 7 in., 1⅝ in. Cutter.....	$4.50
No. B3 —Smooth, 8 in., 1¾ in Cutter. .	4.85
No. B4 —Smooth, 9 in., 2 in. Cutter.....	5.25
No. B4½—Smooth, 10 in., 2⅜ in. Cutter.....	6.10

Packed—One in a Box.

Nos. B5 to B8

	Each
No. B5 —Jack, 14 in., 2 in. Cutter. . . .	$6.10
No. B5½—Jack, 15 in., 2¼ in. Cutter.. . .	6.80
No. B6 —Fore, 18 in., 2⅜ in. Cutter.... ..	7.65
No. B7 —Jointer, 22 in., 2⅝ in. Cutter. .	8.90
No. B8 —Jointer, 24 in., 2⅝ in. Cutter. .	10 50

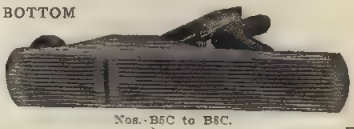
Packed—One in a Box.

CORRUGATED BOTTOM

Nos. B3C to B4½C.

	Each
No. B3C —Smooth, 8 in., 1¾ in. Cutter...	$5.10
No. B4C —Smooth, 9 in., 2 in. Cutter.....	5.50
No. B4½C—Smooth, 10 in., 2⅜ in Cutter .	6 40

Packed—One in a Box.

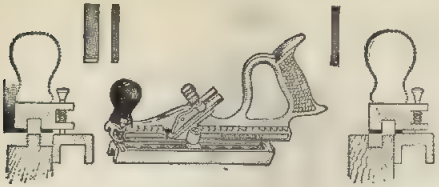


Nos. B5C to B8C.

	Each
No. B5C —Jack, 14 in., 2 in. Cutter... . . .	$6.40
No. B5½C—Jack, 15 in., 2¼ in. Cutter.....	7.15
No. B6C —Fore, 18 in., 2⅜ in. Cutter.....	8.05
No. B7C —Jointer, 22 in., 2⅝ in. Cutter.....	9.35
No. B8C Jointer, 24 in., 2⅝ in. Cutter	11 00

Packed—One in a Box.

STANLEY ADJUSTABLE PLANES
SWINGING FENCE MATCHING PLANES



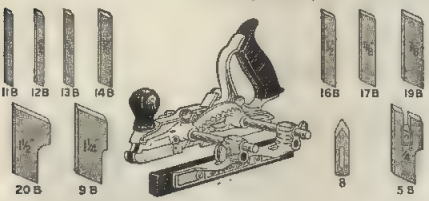
No. 48.

This tool has two plow cutters of the same width, and one extra wide cutter. The fence in one setting exposes two cutters for cutting the tongue, and, when reversed, leaves only one exposed for cutting the groove. On thicker boards than the plane works on center, the extra wide cutter is substituted for groove cutter when cutting tongue. Nickel plated Stock and Fence, with Rosewood Knobs.

No. 48—Cuts 5/16 inch Groove, on boards ¾ to 1¼ inches, centers on ⅞ inch.....**Each, $6.78**

Packed—One in a Box.

PLOW, DADO, FILLETSTER AND MATCHING PLANES



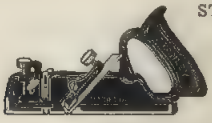
No. 46.

Skew cutters are the feature of this plane. It consists of a Main Stock carrying a spur, depth gauge and slitting cutter; a Sliding Section carrying a spur and forming an extra sole for the plane, and a fence which can be set for either plow or filletster work. The metal parts are nickel plated and the face of fence, handles and knobs are rosewood. The cutters comprise 8 plow and dado bits, 3/16, ¼, 5/16, ⅜, ½, ⅝, ¾ and 1¼ inch; a 1⅜ inch filletster cutter; a ¼ inch tonguing tool and a slitting cutter.

No. 46—10½ inches long, with 11 Cutters as illustrated.....**Each, $15.96**

Packed—One in a Box.

STANLEY DADO PLANES



No. 39.

The great advantage of this Dado Plane over those made of wood is that it will keep true under all conditions even in the narrowest widths. Has skew cutters, and adjustable depth gauge, and two adjustable spurs, one on each side of the plane. This adjustable feature permits of the spurs being adjusted to take up wear, as well as for the depth of the cut. Made in seven sizes, Japanned.

No. 39— ¼ inch Cutter, 8 inches long.....Each, $3.72
No. 39— ⅜ inch Cutter, 8 inches long.....Each, 3.98
No. 39— ½ inch Cutter, 8 inches long.....Each, 4.18
No. 39— ⅝ inch Cutter, 8 inches long.....Each, 4.38
No. 39— ¾ inch Cutter, 8 inches long.....Each, 4.62
No. 39— ⅞ inch Cutter, 8 inches long.....Each, 4.84
No. 39—1 inch Cutter, 8 inches long.....Each, 5.04

Note—In Ordering State Number and Width of Cutter.

No. 239.

This Plane has an extra narrow cut, only ⅛ of an inch wide making it an ideal tool for blind wire grooving and is of special interest to electricians. It is fitted with a double spur, which prevents splintering when working across the grain and insures a smooth, clean cut. A depth gauge is also attached allowing a groove to be cut of any desired depth up to the limit of the plane—⅛ of an inch.

No. 239—Dado Plane, 7½ inches long, ⅛ inch Cutter.....**Each, $5.44**

STANLEY CIRCULAR PLANES

No. 113.

These Planes have flexible steel faces which can be accurately adjusted for planing the inside or outside of circles. Cutters are the same and have the same adjustments as those of the Bailey and Bed Rock Planes.

The face is fastened at its center to the plane body, and adjusted at the ends by means of a screw and levers. Fitted with graduated scale for setting face. Japanned Trimmings.

No. 113—10 inches long, 1¾ inch Cutter...**Each, $9.48**

Packed—One in a Box.

VICTOR CIRCULAR PLANES

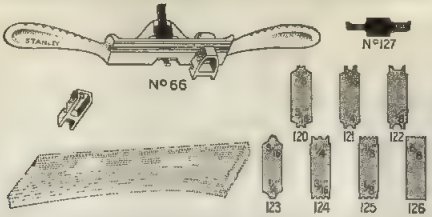
No. 20

Improved design, the face is fastened at each end to the plane body, and adjusted by a screw at the center. This construction gives great strength and accuracy. Japanned Trimmings.

No. 20 10 inches long, 1¾ inch Cutter...**Each, $9.80**

Packed—One in a Box.

STANLEY UNIVERSAL HAND BEADERS

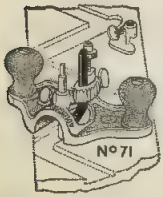


For reeding or fluting straight or irregular surfaces and for light routering. With each beader are furnished a square gauge for straight work, an oval gauge for curved work and 8 cutters sharped at both ends and embracing the following assortments, 6 single beads, 3/16, 7/16, 1/2, 9/16, 5/8 and 3/4 inch; 3 fluting tools, 5/16 and 1/2 inch; 4 reeding tools (2 beads 5/16 inch, 3 beads 1/4 inch, 3 beads 1/2 inch and 4 beads 1/4 inch), 2 routers, 1/8 and 1/4 inch, and a 7/8 inch blank which owner can file up to suit himself. Made entirely of metal, Nickel Plated.

No. 66—11 1/2 inches long, with 8 Cutters as per cut..... Each, $2.06
Extra Moulding Cutters..... Each, ...

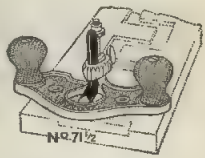
Packed One in a Box.

STANLEY WOODWORKERS' ROUTER PLANES



These Planes are for surfacing the bottom of grooves or other depressions parallel with the general surface of the work. They are made in two styles, differing in the form of throat. The closed throat is the ordinary form of router plane, the open throat, an improved design; giving more freedom for chips and a better view of the work and cutter. The latter has an attachment for regulating the thickness of the chip, and a second attachment for closing the throat for use on narrow surfaces. The bottoms of both styles are designed so that an extra wooden bottom of any size desired can be screwed on, enabling the user to router on large openings.

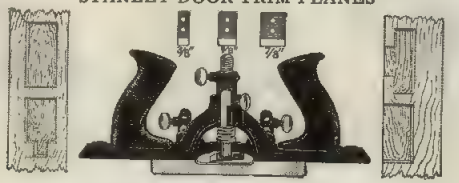
A 1/4 and 1/2 inch cutter are furnished with each Plane. Cutters have screw adjustment, and can be held as shown in illustrations, or on the back of the cutter post, for bull-nose work. Nickel Plated, with Hardwood Knobs.



No. 71—Open Throat, 7 1/2 inches long,..... Each, $5.20
Packed—One in a Box.

No. 71 1/2—Closed Throat, 7 1/2 inches long,.. Each, $4.08
Packed—One in a Box.

STANLEY DOOR TRIM PLANES



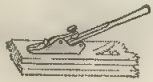
No. 171

This Plane will make mortises for butts, face plates, strike plates, escutcheons, etc., up to a depth of 5/8 and a width of 3 inches. Its original feature is the method of mounting the cutter, which can be instantly set to work from either end of the plane or across it. In addition, the cutter is cushioned by a spring which prevents taking a heavier chip than can be easily carried. A fence regulates the position of the cut and insures the sides of the cut being parallel. The depth of the cut is governed by a positive stop. By removing the fence and locking the cutter post with the thumb screw instead of using the spring a very superior router plane is obtained. The bottom is designed so that an extra wooden bottom of any size desired can be screwed on enabling the user to router on large openings. Japanned, with Rosewood Handles.

No. 171—11 inches long, with 3 Forged Steel Cutters, 3/8, 5/8 and 7/8 inch wide, as per cut..... Each, $7.44

Packed—One in a Box.

STANLEY BLIND NAIL TOOLS



No. 96.

This Tool can be attached to a 1/4 inch Chisel (beveled edge up) and permits a shaving of any desired thickness to be raised, for blind nailing or for inlaid work.

No. 96—2 1/4 inches long, Nickel Plated .... Each, $0.36

Packed—Six in a Box.

STANLEY CORNERING TOOLS

Nos. 28 and 29.

Used by pattern makers and all woodworkers for rounding sharp edges, different size cutter at each end. No depth gauge required.

	Per Dozen
No. 28—With 1/16 and 1/8 inch Cutters.....	$5.96
No. 29—With 3/10 and 1/4 inch Cutters	6.20

Packed—Half Dozen in a Box.

WOOD, FLOOR AND CABINET SCRAPERS

Perfection Adjustable Floor and Cabinet Scrapers, with 3x3 inch 16 Gauge Silver Steel Bevel Edge Blades .....Per Dozen, $14.00
Extra Cutters .....Per Dozen, 3.20

Packed—One-twelfth Dozen in a Box.

Made of Hard Maple with handles shaped to fit the hand. Blade is of Hardened Steel and can be easily removed for sharpening purposes by removing the screws. The elastic blade seat gives the tool a curved scraping surface and prevents it from jumping or chattering. Operated by pushing.

Rams Horn, Floor and Cabinet Scrapers.....
.....Per Dozen, $20.60
Extra Cutters .....Per Dozen, 4.60

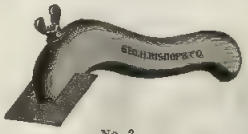
Packed—One-twelfth Dozen in a Box.

No. 194.

Has eight sharp cutting edges, Head Piece and Ball Joint connecting Handle which may be frictionally locked or released. The neatest and best scraper for use on floors, benches, meat blocks, etc.

No. 194—Universal Scrapers.....Per Dozen, $15.00
Extra Blades .....Per Dozen, 2.40

Packed—One-twelfth Dozen in a Box



No. 2.

The improved style slant of this scraper enables its use in out of the way places Any style or size scraper can be held firmly with each holder. 3x3 inch Beveled Edge Blade furnished with each tool.

No. 2—Holder and Blade, complete..Per Dozen, $14.90
Extra Blades .....Per Dozen, 7.30

Packed—One Dozen in a Box

Bennett.

This is a well proportioned tool. The front and back plates are of steel. The blade is held perfectly rigid, but can be instantly adjusted to suit the work. No special blades are necessary.

Bennett Adjustable Scrapers.....Per Dozen, $23.00

Extra Blades .....Per Dozen, 7.50

Packed—One-twelfth Dozen in a Box

This Scrapar is intended for use on large surfaces. The knife, which is 6 inches wide, scrapes the floor when the machine is drawn towards the operator and will therefore work up to the wall and into the corners. The knife is firmly clamped in the Scraper, which together with the weight of the machine, nearly all of which rests on the knife, prevents vibration or chatter, doing away with all wavy effects on the floor The 5 inch wheels are rubber tired so as not to mar the floor. Length of handle and braces 38½ inches, weight 100 pounds; finished in Aluminum

No. 10—Stearns Floor Scrapers.....Each, $25.50

HAND CABINET SCRAPERS

Made of Good Quality Saw Steel.

Inches	3x5	3x6	3½x5	4x6
No. 2—Per Dozen...	$1.90	1.90	2.20	2.40

Made of No. 18 Gauge Silver Steel.

Inches	3x5	3x6	3½x5	4x6
No. 0—Per Dozen...	$5.80	6.50	6.70	8.70

Packed One Dozen in a Box.

CABINET MAKERS' BURNISHERS

No. 1

For Sharpening the Blades of Floor and Cabinet Scrapers, and other Similar Tools

No. 1—4½ inch Oval Blades.....Per Dozen, $8.00

Packed—Half-dozen in a Box.

STANLEY SCRAPER PLANES

No. 212.

Adapted for violin makers and all mechanics requiring a light adjustable scraper, which can be used with one hand. Japanned, with Rosewood Knob and "Handy" Feature.

No. 212—5½ inches long, 1⅝ inch Blade..Each, $3.92

Packed -One in a Box

Extra Cutters for No. 112 Scraper Planes

Veneer Scraper Blades.....Each, $0.64

Toothing Cutters, Nos. 22, 28 or 32, having 22, 28 or 32 teeth to the inch.....Each, 1 06

No. 112.

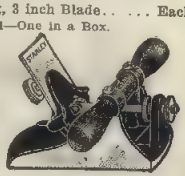
For scraping and finishing veneer or cabinet work, can also be used as a toothing plane for scraping off old paint or glue. Blades are adjustable endwise and for angle, a scraper blade is furnished with each tool, but we can furnish toothing cutters at an extra charge. Japanned with Rosewood Handle and Knob.

No. 112—9 inches long, 3 inch Blade.. ... Each, $5.48

Packed—One in a Box.

No. 85.

No. 64.



No 12

No. 85 Scraper Planes

This is a rabbet scraper with handle and knob pivoted, to allow for tilting, for convenience when working into corners or up against perpendicular surfaces. When in use the blade rests against the front edge of the mouth under a slight pressure, but in working the blade springs backward opening the mouth and allowing the shaving to pass through. Handles and Knobs are of Rosewood.

No. 85—8 inches long, 2 inch Blade.....Each, $5.82

Packed—One in a Box.

No. 12 Scraper Planes

For scraping and finishing veneer or cabinet work, can also be used as a toothing plane for scraping off old paint or glue Blades are adjustable endwise and for angle, double grip handle being placed across the center of the tool, gives it a good balance Japanned, with Iron Face and Rosewood Handle

No. 12—6¼ inches long, 3 inch Blade.....Each, $6.24

Packed—One in a Box.

No. 64 Butcher Block Planes

Designed especially for trueing up or resurfacing Butchers' Blocks The work is accomplished with a specially formed cutter or plane iron set at an exceptionally low angle In addition to the special cutter mentioned, a regular Plane Iron is furnished which will enable the user to finish smooth the final surface of a block and keeping in condition the meat benches and tables ordinarily found in a Butcher's establishment.

No. 64—12½ inches long, 2 inch Blade.....Each, $5.94

Packed—One in a Box.

STANLEY CABINET SCRAPERS

No. 80.

The blade may be sprung to a slight curve by means of a thumb screw, giving ease of operation and quickness of cut. Handles are raised to protect the hands, and pierced so the tool can be hung up out of the way. Body and handles are cast in one piece and japanned.

No. 80—11 inches long, 2⅝ inch Blade....Each, $1.84

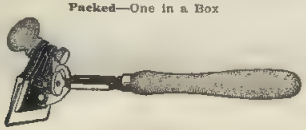
Packed—One in a Box

No. 81.

This Scraper has a rosewood face for use in the finest cabinet work. Handles are raised to protect the hands, and pierced so the tool can be hung up out of the way. Body and handles are cast in one piece and nickel plated.

No. 81—10 inches long, 2½ inch Blade.....Each, $2.98

Packed—One in a Box.



No. 82.

This Scraper has an adjustable single handle which can be tilted to give the blade any angle desired. Special blades of different forms and widths can be securely held in any position, thus permitting the tool to be worked in many places inaccessible to other scrapers. Japanned, with Hardwood Handle and Knob.

No. 82—14½ inches long, 3 inch Blade....Each, $2.42

Packed—One in a Box.

No. 83.

This Scraper has a roller back of the blade which acts as a support to relieve the strain on the wrists of the workman. Handle is made of beech and can be detached for working into corners. Nickel Plated.

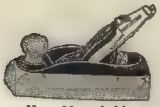
No. 83—9½ inches long, 4 inch Blade.....Each, $2.16

Packed—One in a Box.

Extra Blades for Nos. 80, 81, 82 and 83.....Per Dozen, $4.60

BAILEY ADJUSTABLE WOOD PLANES

SMOOTH



Nos. 22 and 24.

Nos.		Each
22	—Smooth, 8 inch, 1¾ inch Cutter	$4.35
24	—Smooth, 8 inch, 2 inch Cutter	4.60

Packed—One in a Box.

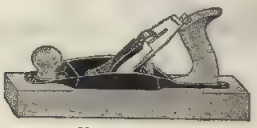
HANDLED SMOOTH

Nos. 35 and 36.

Nos.		Each
35	—Handled Smooth, 9 in., 2 in. Cutter	$5.35
36	—Handled Smooth, 10 in., 2⅜ in. Cutter	6.04

Packed—One in a Box.

JACK AND FORE

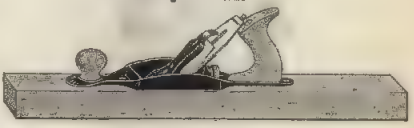


Nos. 26 to 28.

Nos.		Each
26	—Jack, 15 in., 2 in. Cutter	$4.75
27½	Jack, 15 in., 2¾ in. Cutter	5.50
28	—Fore, 18 in., 2⅜ in. Cutter	6.00

Packed—One in a Package

JOINTER



Nos. 31 and 32.

Nos.		Each
31	—Jointer, 24 in., 2⅜ in. Cutter	$6.45
32	—Jointer, 26 in., 2⅝ in. Cutter	6.95

Packed—One in a Package

BAILEY ADJUSTABLE IRON PLANES

Nos. 2 to 4½.

Nos. 5 to 8.

Nos. 3C to 8C.

FLAT BOTTOM

Nos.		Each
2	—Smooth, 7 in., 1⅝ in. Cutter	$4.90
3	—Smooth, 8 in., 1¾ in. Cutter	5.10
4	—Smooth, 9 in., 2 in. Cutter	5.60
4½	—Smooth, 10 in., 2⅜ in. Cutter	6.40
5	—Jack, 14 in., 2 in. Cutter	6.44
5¼	—Jack, Jr., 11½ in., 1¾ in. Cutter	$ 5.80
5½	—Jack, 15 in., 2¼ in. Cutter	7.20
6	—Fore, 18 in., 2⅜ in. Cutter	8 20
7	—Jointer, 22 in., 2⅜ in. Cutter	9.40
8	—Jointer, 24 in., 2⅝ in. Cutter	11.30

Packed—One in a Box.

CORRUGATED BOTTOM

Nos.		Each
3C	—Smooth, 8 in., 1¾ in. Cutter	$5.38
4C	—Smooth, 9 in., 2 in. Cutter	5.90
4½C	—Smooth, 10 in., 2⅜ in. Cutter	6.76
5C	—Jack, 14 in., 2 in. Cutter	6.76
5½C	—Jack, 15 in., 2¼ in. Cutter	$ 7 62
6C	—Fore, 18 in., 2⅜ in. Cutter	8 68
7C	—Jointer, 22 in., 2⅜ in. Cutter	9.92
8C	—Jointer, 24 in., 2⅝ in. Cutter	11 84

Packed—One in a Box.

GAGE SELF SETTING IRON PLANES

Nos. G3 and G4.

No. G5.

Nos. G6 and G7.

The Self-Setting Feature lies in the fact that the plane iron, if taken out to be honed or sharpened, goes back in exactly the same position as before removal. Likewise the plane cap, when taken out to allow removal of the cutter, goes back in its same position.

Nos.		Each
G3	—Smooth, 8¾ in., 1¾ in. Cutter	$5.40
G4	—Smooth, 9 in., 2 in. Cutter	5.90
G5	—Jack, 14 in., 2 in. Cutter	6.80
G6	—Fore, 18 in., 2¼ in. Cutter	8.70
G7	—Jointer, 22 in., 2½ in. Cutter	9 90

Packed—One in a Box.

STANLEY "BED ROCK" PLANES

Rosewood Handles and Knobs—The Cutters are adjustable endwise and sidewise. In "Bed Rock" Planes the bottom of the frog is machined so as to make it a tongue which fits into a groove formed in the bottom of the Plane. This design insures great solidity and perfect alignment between the Frog and the bottom. The movement of the Frog in the groove for widening or opening the throat and the loosening or tightening of the Frog to the base of the Plane is governed by Screw Adjustment which may be operated without removing the Cap or the Cutter

Nos. 602 to 604½

Nos. 605 to 608

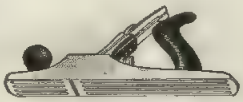
Nos.	Flat Bottom.	Each
602	—Smooth, 7 in., 1⅝ in. Cutter	$5.40
603	—Smooth, 8 in., 1¾ in. Cutter	5.64
604	—Smooth, 9 in., 2 in. Cutter	6.18
604½	—Smooth, 10 in., 2⅜ in. Cutter	7.06

Packed—One in a Box.

Nos.	Flat Bottom.	Each
605	—Jack, 14 in., 2 in. Cutter	$ 7 06
605½	—Jack, 15 in., 2¼ in. Cutter	7 96
606	—Fore, 18 in., 2⅜ in. Cutter	9.08
607	—Jointer, 22 in., 2⅝ in. Cutter	10 38
608	—Jointer, 24 in., 2⅝ in. Cutter	12.40

Packed—One in a Box.

Nos. 603C to 604½C



Nos. 605C to 608C

Nos.	Corrugated Bottom.	Each
603C	—Smooth, 8 in., 1¾ in. Cutter	$5.92
604C	—Smooth, 9 in., 2 in. Cutter	6.48
604½C	—Smooth, 10 in., 2⅜ in. Cutter	7.44

Packed One in a Box.

Nos.	Corrugated Bottom.	Each
605C	—Jack, 14 in., 2 in. Cutter	$ 7.44
605½C	—Jack, 15 in., 2¼ in. Cutter	8.38
606C	—Fore, 18 in., 2⅜ in. Cutter	9.54
607C	—Jointer, 22 in., 2⅝ in. Cutter	10 92
608C	—Jointer, 24 in., 2⅝ in. Cutter	13.00

Packed One in a Box.

IMPROVED SCRUB PLANES

Nos. 40 and 40½.

These Planes have a single iron, with the cutting edge rounded; are particularly adapted for roughing down work before using a Jack or other Plane.

	Each
No. 40 — 9½ in., 1⅛ in. Cutter	$3.10
No. 40½—10½ in., 1⅛ in. Cutter	4.14

Packed—One in a Box.

LOW ANGLE JACK

No. 62

Especially adapted for use in cutting across the grain on heavy work where more power is required than can be obtained by use of the ordinary Block Plane Fitted with patent adjustable throat, enabling the user to work equally well on hard or soft wood.

	Each
No. 62—14 in. long, 2 in. Cutter	$7.14

Packed—One in a Box.

STANLEY ADJUSTABLE PLANES

IMPROVED RABBET PLANES

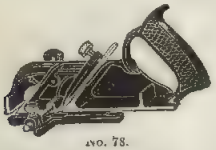
Nos. 190 to 192.

These Planes will lie perfectly flat on either side and can be used equally as well with right or left hand while planing into corners or up against perpendicular surfaces. Fitted with spur for working across the grain and detachable depth gauge. Japanned Iron Stock.

No. 190—8 inches long, 1 ½ inch Cutter.....Each, $3.78
No. 191—8 inches long, 1 ¼ inch Cutter.....Each, 3.54
No. 192—8 inches long, 1 inch Cutter.....Each, 3.32

Packed—One in a Box

FILLETSTER AND RABBET PLANES



No. 78.

This Plane has two seats for the cutter, one for regular work and the other where a bull-nose is required, also a spur and removable depth gauge. The adjustable fence can be used on either side and slides under the bottom, regulating the width of the cut. By removing the fence and arms, a rabbet plane is obtained. Japanned Iron Stock and Fence.

No. 78—8 ½ in. long, 1 ½ in. Cutter.....Each, $4.20

Packed—One in a Box.

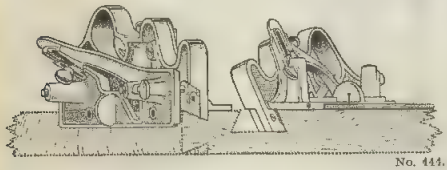
No. 289.

This Plane has an extra wide cutter set on a skew and two adjustable spurs, one on each side of stock. The fence and depth of gauge can be attached to either side so that the plane can be used equally well for right or left hand work. The fence slides under the bottom and regulates the width of cut. By removing the arms and fence a skew cutter rabbet plane is obtained. Japanned Iron Stock and Fence.

No. 289—8 ½ in. long, 1 ¾ in. Cutter.....Each, $4.90

Packed One in a Box.

DOVETAIL TONGUE AND GROOVE PLANES



No. 444.

This Tool accomplishes a result sought for many years by wood-workers in general, namely, to form a dove-tail tongue and groove with one hand tool. It will cut any size grooves and tongues to fit with sides at flare of 20 degrees, where the width of the neck is more than ¼ inch and the depth of groove not more than ⅝ inch. The tongue and groove are cut separately, and can be made with parallel or tapering sides. Simple in operation, all parts interchangeable. A circular is sent with each tool containing instructions for assembling and operating.

No. 444—Dovetail Tongue and Groove Plane, 9 inches long, Heavily Nickel Plated.....Each. $13.94

Packed—One in a Box.

RABBET PLANE

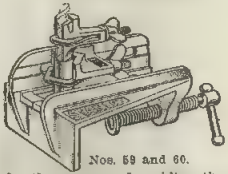
No. 278

The sides and bottom being square with each other, the plane will lie perfectly flat on either side. Has an adjustable fence which slides under the bottom, regulating the width of the cut. Fitted with spurs, one on each side, for working across the grain, also an adjustable depth gauge suitable for either right or left hand work. The front of the plane can be easily detached, for working up into the corners. The cutter is adjustable endwise.

No. 278—Rabbet Plane, 1 in. Cutter, 6 ¾ in. long
.....Each, $4.08

Packed—One in a Box

DOWELING JIGS



Nos. 59 and 60.

This tool is for the purpose of enabling the user to bore dowel holes in the edge, end or surface of work with ease and accuracy. It will take any thickness of material up to three inches. It is also an excellent bit guide for mortising. With the Doweling Jig the steel guide is automatically set to guide the bit properly when the Jig is clamped to the work. A depth gauge is also furnished which can be used with or without the Jig. Made entirely of metal, the working parts being milled true. All parts are nickel plated

No. 59—With 5 Guides, 1 each, ¼, 5/16, ⅜, 7/16 and ½ inch.....Each, $3.54

No. 60—With 9 Guides, 1 each ¼, 5/16, ⅜, 7/16, ½, 9/16, ⅝, 11/16 and ¾ inch.....Each, 5.16

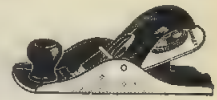
Packed - One in a Box

STANLEY BLOCK PLANES

No. 100.

No. 101.

No. 102.



No. 110.

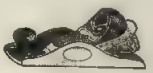
No. 110 has Applewood Knob, Stained Black.

No. 100—Non-Adjustable, Japanned Trimmings, 3½ inches long, 1 inch Cutter.....Each, $0.72
No. 101—Non-Adjustable, Japanned Trimmings, 3½ inches long, 1 inch Cutter.....Each, .56
No. 102—Non-Adjustable, Japanned Trimmings, 5½ inches long, 1⅝ inch Cutter.....Each, 1.08
No. 110—Non-Adjustable, Japanned Trimmings, 7½ inches long, 1⅝ inch Cutter.....Each, 1.50

Packed—No 101, Six, Nos 100, 102 and 110, One in a Package

No. 103.

No. 120.



No. 203.

No. 220.

Adjustable, with Japanned Trimmings and Rosewood Knobs.

No. 103—Lever Adjustment, Japanned Trimmings, 5½ inches long, 1⅝ inch Cutter.....Each, $1.50
No. 120—Lever Adjustment, 7½ inches long, 1⅝ inch Cutter.....Each, 2 12
No. 220—Screw Adjustment, 7½ inches long, 1⅝ inch Cutter.....Each, 2 20
No. 203—Screw Adjustment, "Handy" Feature, 5½ inches long, 1⅝ inch Cutter.....Each, 1.96

Packed—One in a Box.

No. 130.

Double End. This Plane has two slots and two Cutter Seats. Use center slot and seat for Block Plane work, and other slot and seat when it is desired to work same as a Bull Nose Plane. Japanned Trimmings, Hardwood Knob

No. 130—8 inches long, 1⅝ inch Cutter.. Each, $2.20

Packed—One in a Box.

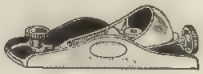
No. 131.

Adjustable Double End. This Plane has two slots and a movable Cutter seat. When it is desired to use it as a Bull Nose Plane, the cap and cutter can be removed and the adjustable Cutter seat reversed as shown in cut. Japanned Trimmings, Rosewood Knob, "Handy" Feature.

No. 131—8 inches long, 1⅝ inch Cutter.. Each, $3.54

Packed—One in a Box.

Nos. 60 and 60½



Nos. 65 and 65½.

Low Angle. In these Planes the Cutter is set at a very low angle, which is of great advantage when working across the grain. They have the "Handy" feature and Adjustable Throats. Cutters are adjustable endwise by means of the Adjusting Wheel at the rear of the plane.

Japanned Trimmings.

No. 60½—6 in. long, 1⅝ in. Cutter..... Each, $3.06
No. 65½—7 in. long, 1⅝ in. Cutter.....Each, 3.28

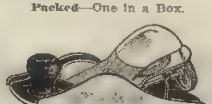
Packed—One in a Box.

Nickel Trimmings.

No. 60—6 inches long, 1⅝ in. Cutter..... Each, $3.40
No. 65—7 inches long, 1⅝ in. Cutter.....Each, 4.00

Packed—One in a Box.

No. 61.



No. 140.

Low Angle. This Plane is similar to the No. 60½, listed above, as regards size and trim, except it has a Rosewood Knob and the Throat is not adjustable. The cutter is adjustable endwise and the Plane is fitted with the "Handy" feature. Invaluable for Manual Training teachers.

No. 61—6 inches long, 1⅝ inch Cutter.....Each. $2.94

Packed—One in a Box.

Rabbet and Block Plane. A detachable side will easily change this Tool from a Block to a Rabbet Plane or vice versa. The Cutter is adjustable endwise and is set on a skew. Japanned Trimmings, Rosewood Knob.

No. 140—7 inches long, 1¾ inch Cutter.....Each, $3.82

Packed—One in a Box.

EXPLOSIVES SECTION

SECTION XVIII

FOR INDEX TO ALL ENGINEERING DATA SEE PAGE 10.

THE FOLLOWING MANUFACTURERS AND DEALERS ARE REPRESENTED IN THIS SECTION

Atlas Powder Co.
Austin Powder Co.
DuPont, E. I., De Nemours & Co.
Ensign-Bickford Co.
Equitable Powder Mfg. Co.
Grasselli Powder Co.
Hercules Powder Co.
Illinois Powder Mfg. Co.
Peerless Explosives Co.
United States Powder Co.

FOR LIST OF EQUIPMENT USED IN COAL MINING SEE PRODUCTS INDEX (Blue Sheets)

EXPLOSIVES

By Robert M. Black.*

It is natural to associate explosives with destruction, but their use in construction and upbuilding has been a large factor in the history of civilization. They have been essential in making the excavations for many railroads, canals, and buildings, they have assisted in agriculture, they have made quarry work easy, they have limited conflagrations and they have made possible economical mining.

Primitive mines appear to have been surface accumulations of gems or minerals, which were loosened with pointed sticks. The ancients later used alternate applications of fire and water to loosen the valuable mineral, or rock containing it. Such methods could not produce a quantity of mineral sufficient to meet the growing demands. Nor did the best of the early methods penetrate beyond very shallow depths, unless the material happened to be exceptionally rich and easy to work. While there are some substitutes for explosives now used in a limited way in mining practice, still the history of mineral production shows the dependence of the industry on explosives. Increased use has brought about improvements in composition, in facilities for use, in safety and in cost, most of which development has taken place within comparatively recent times. Explosives are to be credited not only with the large production of mineral generally, but also with the entire production of certain minerals that occur under conditions rendering them difficult or impossible of winning otherwise. Practically all the coal mined in the United States is broken from the seam by the use of explosives.

The oldest explosive is believed to be gunpowder, but the date of its invention and the name of the inventor remain uncertain. A document still preserved at Florence, Italy, relating to the manufacture of cannon, refers incidentally to gunpowder. The date, February 11, 1326, marks the first unquestioned reference to the use of gunpowder in Europe. Roger Bacon, the English philosopher, who lived in the thirteenth century, writes of a mixture composed of saltpeter, charcoal and sulphur in proportions similar to those of gunpowder, "producing noise like thunder and flashes like lightning". It seems to have been regarded at that time as a curiosity, and its applications to useful work were unknown. There is some reason to refer the invention of gunpowder back to more ancient time, when, according to the views of some, the Chinese, Greeks and other races had substances resembling it, but the evidence is by no means conclusive.

DESCRIPTION OF EXPLOSIVES

An explosive is defined as a substance capable of extremely rapid decomposition into a relatively large volume of gases under the action of either heat or shock. Combustion is the union of any element with oxygen, a familiar example of which is the burning of wood, the carbon of the wood uniting with oxygen to form gases. The gases in this case are formed slowly, and have abundant opportunity to pass off into the atmosphere without disturbance. If the rate of formation of the combustion gases is rapid, and if the volume of such gases is much greater than can be contained in the space formerly occupied by the combustible substance, then the pressure on the inside of the space containing the gases is so great that the enclosing material is ruptured and fragments are thrown to varying distances. The pressure is further increased by the heat of combustion expanding the gases formed.

Gunpowder

The essential feature of an explosive being the production of a large volume of gases from a small volume of the substance, materials have been sought that would give the most efficient results. While oxygen from the air is sufficient to support ordinary combustion, the supply is not great enough to produce the volume of gases necessary to do the work of an explosive. Some source of concentrated oxygen is, therefore, required, and for this purpose, saltpeter, or potassium nitrate (KNO_3), suggests itself. This substance is found in nature in various places on the globe, but it seems to have been observed originally in India, and for that reason is sometimes known as India saltpeter. The substance selected for the combustible was charcoal, which is composed chiefly of the element carbon. In the process of combustion, charcoal contributing carbon and saltpeter contributing oxygen, gases composed of carbon and oxygen atoms are formed, chiefly carbon dioxide (CO_2), but with some carbon monoxide (CO) where combustion is incomplete. The problem was to start the combustion. Carbon and oxygen do not unite at ordinary temperatures, but only at a high temperature. To obtain the heat most easily, sulphur was added to the mixture. Sulphur burns readily, and in doing so, produces a temperature sufficiently high to effect the union of carbon and oxygen atoms. The mixture described is known as gunpowder, because it was early applied to use in guns. The standard proportions for the ingredients are 75 parts potassium nitrate, 15 parts charcoal and 10 parts sulphur, all in terms of weight.

It is necessary that the ingredients be thoroughly mixed, in order that each particle of combustible may have as close to it as practicable a particle of oxygen. The nitrogen of the potassium nitrate is liberated as gas, and the potassium combines with the sulphur to form potassium sulphide (K_2S), a solid product, approximately one-third the volume of the gunpowder.

*Professor of Mining University of Pittsburgh.

Other nitrates than potassium nitrate might meet the requirements for supplying oxygen, and efforts have been made to find an efficient substitute, which would at the same time have the advantage of being cheaper. About 1870, sodium nitrate ($NaNO_3$) was first used, and found to be successful from these standpoints, where its property of absorbing moisture was not detrimental. As this substance came chiefly from Chile, it has been known as Chile saltpeter. For use in guns, the potassium nitrate powder is preferred, because it keeps drier, and therefore, in better condition for use after long periods of preservation.

Black Blasting Powder

For a blasting powder, either of the two saltpeters may be used, but the consideration of economy favors the sodium nitrate. Powders made from either saltpeter are known commonly by the name of black powder, or blasting powder, that containing potassium nitrate being usually designated by manufacturers as "A", and that containing sodium nitrate as "B". When sodium nitrate is used, the proportions of the mixture are slightly different, namely, 73 parts sodium nitrate, 16 parts charcoal, 11 parts sulphur. The difference is due chiefly to the fact that the oxygen content of sodium nitrate is greater than that of potassium nitrate. In each case, the intention is to provide just enough oxygen to consume the carbon and sulphur.

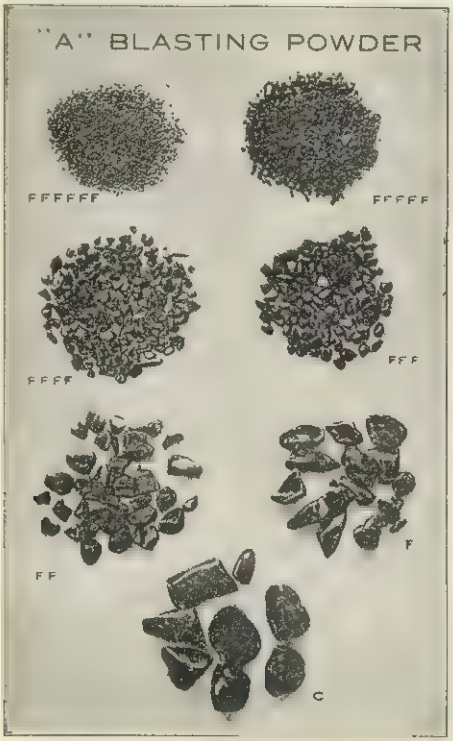


Fig. 1—Sizes of "A" Blasting Powder.

Blasting powder is marketed in granular form, "A" powder, Fig. 1, usually in seven different sizes, and "B" powder, Fig. 2, in the same number, each

Fig. 2—Sizes of "B" Blasting Powder.

size being designated by one or more letters. In general, the sizes of "A" and "B" powders do not correspond, the "B" averaging larger than the "A".

The powder is packed in sheet steel kegs, usually of 25 pounds capacity, although the use of fibre for the material of the container is also in favor. The chief advantage of the latter is that it is a nonconductor of electricity, and is, therefore, safer for transportation in cars hauled by electric locomotives. If the powder is received in metal containers, it may be transferred to fibre containers, provided with bail handles and designed specially for such transportation. The latter are known as electrical pails, and are used for other explosives, as well as blasting powder. The same material has been employed in making powder flasks for the individual miner, these being of the maximum capacity permitted by law, usually five pounds.

The sizes of powder are carefully separated at the factory, and grains of one size only are shipped in one container. The chief purpose of this precaution is to insure, as far as possible, uniformity in rate of burning. If grains of different sizes were mixed, the smaller grains would burn more quickly,

and tend to throw the larger grains in an unburned or incandescent state out of the hole. Under some circumstances, the result would be only a waste of the larger grains, but if explosive gas were present, as is often the case in coal mines, the danger of igniting it would be very great. Another advantage of uniform sized grains is the standardizing of results, which makes possible the selection of powders suited to certain requirements. The grains are usually glazed with graphite to render them more impervious to moisture. Fine grained powders are quicker, and tend to shatter the material more, while coarse grained powders are slower and have more of a lifting effect.

Chlorate Powder

Oxygen may be obtained from other compounds beside nitrates, and many efforts have been made to adapt such substances to use in explosives. Some success has been attained with potassium chlorate ($KClO_3$), but the liability of this substance to explode on slight friction has prevented its general use. Methods have been devised, however, of restricting this tendency by mixing with certain other substances, such as starch, and the results have been satisfactory.

Nitroglycerin

Oxygen may be made to unite chemically with certain substances by treating the substances with nitric acid (HNO_3). The nitric acid is manufactured from either of the saltpeters, and contains the same quantity of oxygen as the saltpeter. One substance frequently treated with nitric acid for this purpose is glycerin, $C_3H_5(OH)_3$, the result of the nitration being a compound known as nitroglycerin, $C_3H_5(NO)_3$. In this process, sulphuric acid is first run into nitric acid, then glycerin into this mixture, the heat of the reaction being dissipated by careful stirring and sometimes artificial cooling. The nitroglycerin formed is separated from the acid by pouring into cold water, and is then purified.

Nitroglycerin is a colorless, oily liquid with specific gravity about 1.6. It freezes at a temperature of about 55° F., and is evaporated by heating, but at 306° F., explodes by reason of the temperature alone. It is poisonous to the human system internally and externally, but the danger from contact poisoning diminishes with continued handling. It is exploded ordinarily by shock, and is very sensitive to shocks; therefore, is especially dangerous to handle. In the liquid condition, it is little used, but when associated with certain solid substances, its properties may be employed with reasonable safety. Nitroglycerin is among the most important of all explosives commercially.

There are two general classes of explosives, represented respectively by gunpowder and nitroglycerin, and known as low and high explosives on account of the difference between their effects. The same classes are known as deflagrating and detonating explosives, because of the manner of their ignition. High explosives are more rapid and more powerful than low explosives.

Dynamite

Nitroglycerin is used most in connection with an absorbent material, or dope, such as wood meal or infusorial earth, and the mixture is known as dynamite. Its specific gravity is about 1.4. Dynamite possesses the properties of nitroglycerin, but is safer to transport and handle than the liquid. Dopes may be inactive, as those mentioned above, or they may be active, and contribute to the explosion of the dynamite. An example of active dope sometimes used is gunpowder. Dynamite and other nitroglycerin mixtures are graded according to their strength by percentages of nitroglycerin, or its equivalent, present in the mixture. The usual range is from 15 per cent. to 60 per cent. For purposes of comparison, the United States Bureau of Mines has adopted as its standard straight dynamite a mixture of 40 per cent. nitroglycerin, 44 per cent. sodium nitrate, 15 per cent. wood pulp and 1 per cent. calcium carbonate.

For commercial use, dynamite is packed in paraffined paper cartridges, 8 inches long and usually 1¼ or 1½ inches in diameter. The cartridges are packed in wooden boxes, each containing 25 or 50 pounds.

The products of combustion of 200 grams of standard dynamite are stated as follows:*

PRODUCTS OF COMBUSTION FROM 200 GRAMS OF THE EXPLOSIVE

	Grams.
Solid	79.7
Liquid (water)	14.5
Gaseous	85.4

Gaseous Products of Combustion

	Per cent. by volume.
Carbon dioxide	51.4
Carbon monoxide	5.0
Hydrogen	3.2
Methane	.3
Nitrogen	41.1
	100.0

Solid Products of Combustion

	Per cent.
Soluble (sodium carbonate)	79.43
Insoluble (calcium carbonate, trace of unburned carbonaceous matter, and carbonates and oxides of copper, iron, and tin)	20.57
	100.00

GASEOUS PRODUCTS OF COMBUSTION FROM 200 GRAMS OF THE EXPLOSIVE AND 12.4 GRAMS OF PAPER WRAPPERS.

	Per cent.
Carbon dioxide	37.2
Carbon monoxide	26.9
Hydrogen	15.0
Methane	.4
Nitrogen	37.4
	100.0

Guncotton

If cotton is treated with nitric acid in a manner corresponding to the treatment given the glycerin, there results a substance, guncotton, or nitrocellulose, which is highly explosive. The chemical process is essentially a replacement of the hydrogen in the cotton by nitrogen and oxygen, this providing the oxygen necessary for burning the substance with explosive rapidity. Another high explosive, similar to guncotton in its composition and manufacture, is nitrostarch, made by nitrating starch.

Blasting Gelatine

A solution of guncotton in nitroglycerin makes a gelatinous substance, known as blasting gelatine, which is an extremely quick and powerful explosive, inasmuch as the carbon that would be left after explosion of the guncotton alone is consumed by the oxygen that would be left by the explosion of the nitroglycerin alone. The strength of blasting gelatine is rated at 100 per cent. The mixture of blasting gelatine with an absorbent dope is known as gelatine dynamite. Either form is considered to be especially suited to blasting under water.

Dynamite and other nitroglycerin mixtures must be thawed when frozen, because in the frozen

*Bulletin 16, U. S. Bureau of Mines, page 172.

Class 4, the Nitroglycerin Explosives, includes those containing nitroglycerin. These might be placed with the organic nitrate class, but the nitroglycerin explosives are so important and so different from other organic nitrate explosives that the separate classification is appropriate. The flame temperature is usually reduced by the presence of water in the mixture. To remove the objections to nitroglycerin on account of its shattering effect on the coal, substances are added that tend to neutralize these effects.

Classes 1a and 4 are the most numerous, the others being represented as yet by a very small number relatively.

The tests made on each mixture submitted are designated as follows: physical examination, unit deflective charge, gas and dust gallery, rate of detonation, flame test, explosion by influence test, impact test, pressure gauge test, calorimeter, compression of small lead blocks and expansion of bore hole of Trauzl lead blocks.

The Physical Examination embraces dimensions, weight and specific gravity of cartridge, together with color and consistency of the explosive material.

The Unit Deflective Charge is the quantity of the explosive by weight that is equivalent in strength to one half pound (227 grams) of standard dynamite. The quantity is determined by firing a charge in a cannon and noting the deflection of a ballistic pendulum, Fig. 3. This deflection is

Fig. 3—Ballistic Pendulum.

compared with that from firing the half pound of standard dynamite under similar conditions. Unit deflective charges of permissible explosives are listed in Table I.

The Gas and Dust Gallery is a steel cylinder open at one end, 100 feet long and 6 feet 4 inches in diameter, intended to duplicate as far as possible a coal mine entry. At the closed end, Fig. 4, the unit deflective charge is fired a number of times from a hole, similar to the drill hole used in a mine, into certain definite mixtures of explosive gas and air, and into coal dust distributed through the gallery according to certain standards. In order to pass this test, the explosive must not ignite the gas or dust in any of the trials. Black blasting powder has never failed to produce ignition in any of these tests.

The Rate of Detonation is the velocity at which the explosion progresses through the charge. As the shattering effect is about proportionate to this velocity, a measure of the shattering effect is thereby obtained. An electric recording instrument is used to measure the rate of detonation. The rates for permissible explosives in no case equal the rate for standard dynamite.

Fig. 4—Loading Gun in Gas and Dust Gallery.

The Flame Test is one of the most important, inasmuch as its purpose is to measure the height and duration of the flame. The process is one of photographing the flame on a film moving at a known speed. The flames of permissible explosives approximate in height and duration that of standard dynamite.

The Explosion by Influence Test estimates the sensitiveness of an explosive to the wave produced by an ignition of a mass of the same material in the vicinity. Trials are made with sets of two cartridges at different distances, and the minimum distance at which no explosion occurs is recorded.

The Impact Test is made by dropping a steel hammer from different heights upon a charge of explosive which rests upon a steel anvil. The greatest fall producing no explosion is the record sought.

The Pressure Gauge Test determines the pressure per unit of area exerted by the firing of a charge in a space just large enough to contain the charge.

The Calorimeter Test determines the heat generated by ignition of a certain quantity of the explosive. The heat is transmitted to a known quantity of water, and the increase in the temperature of the water is measured, from which the number of calories may be computed.

The Test for Compression of Small Lead Blocks is made by firing a charge of explosive in contact with lead cylinders 2½ inches high and 1½ inches in diameter. The amount of compression is found by measuring the height of the block after the test and comparing with the original height.

The Test for Expansion of Bore Hole of Trauzl Lead Blocks is made with blocks 7.87 inches high and 7.87 inches in diameter, into which a hole has been bored a little over half the length. The charge is placed in the bottom of the hole and fired. The volume of the bore hole before and after the explosion is measured by means of water, the difference between the volumes being the amount of expansion.

In case the material has bedding planes or cleavages, as is true of most coals, Fig. 5, advantage should be taken of these in placing the shots. The presence of a bedding plane or cleavage reduces the work required to break the coal in that direction, and consequently the position of the shot may be shifted, with a view to balancing the work in all directions.

Fig. 5—Cleavages and Bedding Plane of a Coal Seam.

It is customary in coal mining to make one or more cuts across a face, either horizontal or vertical, or both. A horizontal cut is sometimes at the top or middle, but usually at the bottom, and is then called an undercut. A vertical cut, which is termed a shearing cut, may be at one side or in the middle. The number of holes used in any working place in a coal mine depends upon the width of the place and upon the character of the coal. Assume the seam to be 6 feet thick, and the place to be not over 25 feet wide. An undercut is about 4 feet deep when made by hand with a pick, and 5 feet to 10 feet deep when made by machine. The standard practice would be to use three holes, one at each side near the roof and one about 4 feet above the floor, the latter so pointed as to have its inner end near the middle. A rule generally followed makes the depth of the hole less than the depth of the cut. Fig. 6 shows front and side views of the coal face with the holes in position. The middle hole being fired first, would have two free

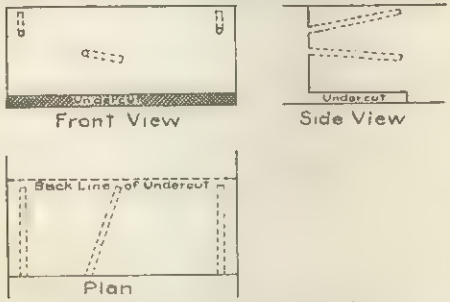


Fig. 6—Location of Drill Holes for Undercut.

faces on which to work, while the side shots, fired later, either separately or together, would have three. The central shot, often called the buster shot, or breaking-in shot, would break roughly a triangular section of face with apex at the drill hole and base on the upper edge of the undercut, and coal in the vicinity of this break, particularly above it, would be loosened, so that it might be picked down easily. The other holes would break their respective halves of the face remaining. In case the undercut is relatively narrow, such as would be made by a chain cutter, about 6 inches in thickness, there is a tendency for the coal after being blasted to settle on the base of the undercut and not fall forward from the face. This condition makes the loading more difficult, and is avoided by removing a strip of coal not usually over 2 feet high from the front of the portion immediately above the undercut. This process is known as snubbing, and the coal broken in the process is known by the same name. The snubbing may be accomplished by hand work with pick, or by light shots placed at the top of the strip to be broken.

For narrow places, such as entries or extra narrow rooms, two shots are generally used, aside from such snubbing shots as may be necessary. One of these is placed near one of the ribs, and serves as the buster shot. The other at the opposite rib completes the breaking. It is rarely possible to break a complete face with less than two shots. More than three may sometimes be required, when the system of mining involves extra wide rooms.

A typical arrangement of holes to blast coal after a shear cut is shown in Fig. 7. The coal may

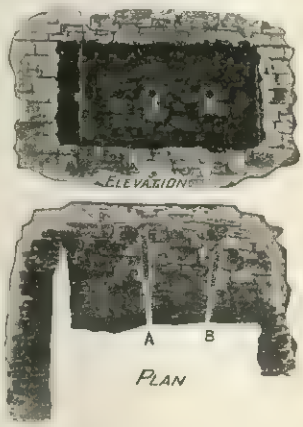


Fig. 7—Location of Drill Holes for Shear Cut.

be both sheared and undercut, if difficult to blast with a reasonable quantity of explosive.

In addition to the practice of blasting after undercutting, or other forms of cutting, there is that of blasting without cutting or shooting off the solid. According to the United States Geologocial Survey, about 15.9 per cent. of the bituminous coal mined in the United States in 1915 was shot off the solid, but the distribution is not uniform. In general, the eastern bituminous districts follow the practice very little, but the central states produce large percentages of their coal in this way. In the anthracite fields of Pennsylvania, shooting off the solid is the custom, but cutting machines are gradually being introduced. The placing of the hole is illustrated in Fig. 8. It is drilled at a small angle to the solid face, rarely over 35°. It is considered necessary for safety that a perpendicular from the inner end of a drill hole intersect the free face, and

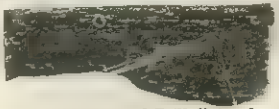


Fig. 8—Location of Drill Holes for Shooting off the Solid.

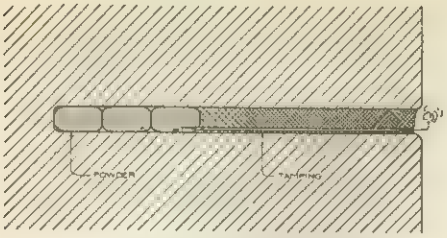


Fig. 10—Drill Hole, Showing Squib Lighted.

The squib has the advantage of cheapness, and usually of time saving, but is uncertain on account of possible caving of the needle hole. Another objection is the danger of igniting explosive gases that may be present.

A second means of igniting a charge of powder is fuse, generally called safety fuse, Fig. 12, which

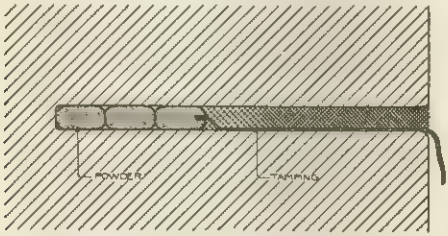


Fig. 12—Drill Hole, Showing Fuse in Place.

is a train of fine powder enclosed in hemp or cotton, covered with one or more layers of tape for the purpose of waterproofing. When lighted at one end, flame travels along inside the tube to the other end, where, if placed within the charge, it ignites the powder. Fuse usually burns at the rate of 1½ to 2 feet per minute, and the rate is specified by the manufacturer. The blaster is thus enabled to estimate the length of fuse required to enable him to reach a safe place, and by cutting a fuse to proper length, may take more time than a squib would allow. The rate of burning cannot be guaranteed, however, as fuse may be subjected to injury that would interrupt the train of powder. It is advisable to make tests of the fuse in use for rate of burning. Failure of a charge to explode may be only temporary, and the flame may be started again on its path after an interval. Many lives have been lost by returning prematurely to investigate a delayed ignition. Fuse is prepared for conditions varying from dry to submarine, the difference being mainly in the character of taping. The uncertainty of fuse and its tendency to flame are serious objections.

Fig. 13—Detonators.

A third method of ignition involves the use of detonators. It may be applied to low explosives, but is most used in firing high explosives and permissibles, and is the only approved method of firing the latter. A detonator is distinguished from an electric detonator. The former is commonly called a blasting cap. A blasting cap (or detonator proper), as shown in Fig. 13, is a copper cylinder about a quarter of an inch in diameter and from 1¼ inches to 1⅞ inches long, filled for about one-third to one-half its length with mercury fulminate or a mixture of mercury fulminate with potassium chlorate. The sensitiveness and other qualities of these substances have already been described. The

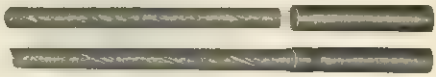


Fig. 14—Fuse and Detonator.

other end of the detonator is left open for inserting the end of a fuse, which, when lighted, conveys flame directly to the mercury fulminate or other composition. The ignition of this substance produces a shock that is ample to detonate completely the charge of high or permissible explosive. In the attachment of fuse to blasting cap, Fig. 14, it is desirable to have a tight fit, in order to maintain their relative position, but not so tight as to break the powder train inside the fuse. The best and safest means of attaching is a crimper designed for the purpose. The crimper is often combined with a fuse cutter in one tool.

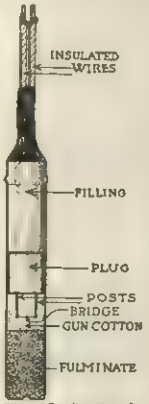


Fig. 15—Sectional View of Electric Detonator.

An electric detonator, or electric blasting cap, serves the same purpose as the detonator or blasting cap used with fuse, but is so constructed that it can be fired by discharging an electric current through it. It consists, as shown in Fig. 15, of a copper shell, containing at its inner end the charge of mercucy fulminate, followed sometimes by guncotton, next a waterproof plug and at the outer end a quantity of filling material. Insulated copper wires enter the cap and traverse the filling material and plug, terminating in the fulminate or guncotton. The ends, or posts, of the copper wires are connected by a platinum bridge, which is heated to incandescence by the electric current, thus exploding the charge. Detonators, whether electric or not, are designated by numbers, each number representing a different strength. No. 6, for example, contains 1.00 gram of the charge.

Fig. 17 Primer with Electric Detonator.

An electric squib, Fig. 16, has been designed to replace the ordinary type of squib when blasting powder is used. It is a paper shell, containing a composition that

Electric Squib (Actual Size)

Fig. 16.

flames when the electric current passes though it, and thus ignites the blasting powder. It is instantaneous, avoids the fumes that would come from an ordinary squib and is safer.

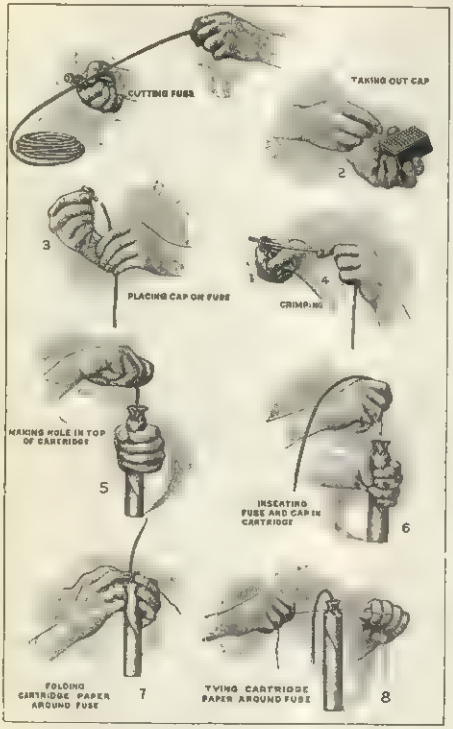


Fig. 18—Priming a Cartridge at the End.

Delay electric igniters consist of copper cylinders made on the same principle as an electric blasting cap but instead of an explosive charge at the end of the capsule, a piece of high-grade fuse is crimped firmly against the priming composition. These fuses vary in length from 2 to 12 in. When the igniter is used for firing high explosives, a blasting cap is crimped on to the end of the fuse; for black blasting powder, the blasting cap is unnecessary. The current passing through the cap ignites the fuse. Different delays in detonating the explosive are obtained by varying the length of the fuse in the igniter.

Delay-action exploders are similar in principle to delay-action igniters except that a blasting cap is securely crimped on to the fuse and the exploder waterproofed by the manufacturer. A hole is left through the sulfur plug of the exploder so that the gases from the burning fuse may escape. This hole is closed by a shot valve and a waterproofing compound, which prevents any water from entering until the interior gas pressure is sufficient to keep it out.

Primer

In the use of high or permissible explosives, only one of the cartridges, usually the outer one of a charge, is in direct contact with a detonator. This cartridge is known as the primer, Fig. 17. The preparation of the primer is shown in Fig. 18.

After the fuse has been inserted into the end of the detonator and the latter crimped on the fuse, the cartridge wrapper is unfolded at one end and a hole is punched in the end of the cartridge by means of a wooden stick. The detonator is imbedded in the explosive material as far as the crimping. Then the loose paper is folded about the fuse and tied with a string.

Another method, Fig. 19, involves the punching of a hole diagonally in the side of the cartridge and

Fig. 19—Priming a Cartridge at the Side.

inserting in it the detonator, binding the fuse to the outer surface of the cartridge with a string. This method is not so generally accepted, because of the liability of damage to the fuse through abrasion or bending, also because the greatest shock from a detonator is in line with its axis and away from the fuse or wires. The method of passing fuse entirely through a cartridge is a dangerous one, since bends or breaks may thus occur in the fuse, and the explosive may be burned, instead of detonated.

When electric detonators are used, the primer is prepared similarly, with detonator either in the end or side. Some users recommend the side

method for electric detonators, but the practice is by no means universal. A method that has been recommended for making a primer with electric detonator is shown in Fig. 20. The strength of the

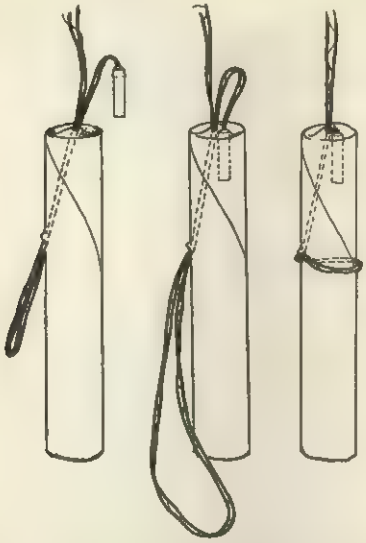


Fig. 20—Method of Priming with Electric Detonator.

detonator should be adapted to the work required. One too strong is better than one not strong enough. The use of No. 6 or stronger detonators is recommended for firing permissible explosives. Tests show that explosions are quicker and more complete, and consequently a smaller volume of poisonous gases is generated when such detonators are used. Also, unfavorable conditions, such as age of the explosive, are less effective.

Tamping

With the primer properly prepared and placed in the hole outside of the other cartridges, damp clay or other incombustible material is tamped in upon the charge and around the fuse or electric wires extending to the mouth of the hole. The first six inches or so of tamping should be comparatively loose, in order to avoid disturbing the charge and detonator, but the remainder should be packed firmly, since the explosive gives better results on the coal when the resistance of the material in the drill hole is greater. A longitudinal section of the hole is shown in Fig. 21.

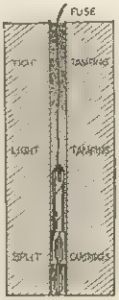


Fig. 21—Section of a Charged Drill Hole.

Electrical Method of Firing

The method of firing shots electrically has many advantages. First of all, it is safer. The charge can only be ignited by the person who controls the electric current, and he does not incur the risk so common with fuse or squib of ignition before he has reached a safe place. Delayed ignition is practically unknown when electricity is used. The danger of igniting gas or dust from squib or fuse flame is absent. Fumes of burning fuse are eliminated. Several shots may be fired simultaneously, thereby increasing the effect over that from firing the same shots separately. Electrical detonation of the eplosive is found to be more complete and efficient.

Electric detonators may be obtained with wires from 4 feet to 20 feet in length. In any case, the wires should be long enough to extend at least a few inches out of the drill holes. At their ends good electrical connection is made to copper leading wires, which in turn are connected to the poles of the blasting machine. Leading wires may be two single wires or one duplex cable. In either case, they are thoroughly insulated. To connect the electric detonators in adjacent holes, when several are to be fired simultaneously, a smaller wire, known as connecting wire, is used, and the detonators are

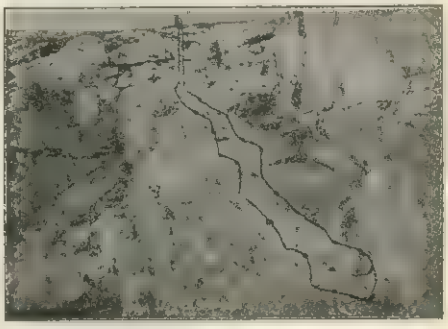


Fig. 22—Blasting Circuit Connected in Series.

connected in series, as shown in Fig. 22. By this arrangement, the firing of all the detonators is assured, if one is fired.

The electric current necessary is usually generated with a blasting machine, often called a battery. The machine is essentially a dynamo, in which the input is the blaster's physical energy and the output is electrical energy. The average size of blasting machine for underground use

Fig. 23—Two-Post Blasting Machine.

clination to make it compulsory. It is that of firing by throwing an electric switch on the surface.* after all persons, including the shot firers, have left the mine. All the shots may be fired simultaneously, but if preferred, they may be fired in groups by installing several independent switches and wiring systems, each serving a different portion of the mine, or by connecting several wiring systems in turn to the switch. The power circuit is generally the source of current for firing from the surface, in which case the detonators are connected in parallel, instead of in series, as with the blasting machine. The inspection of the shots is as important as before, and in addition, the shot firer has the duty of maintaining the connections to the surface. Some authorities believe that firing a great number of shots simultaneously involves a greater risk of gas or dust explosion than firing the same number singly, also that the danger to the roof and timbering is increased. Experience has not yet been sufficient to draw definite conclusions, but there is at least one disastrous mine explosion that occurred when firing was done from the surface.† The explosive used in the case cited was black blasting powder.

Thawing

Since many of the high explosives and many of the permissibles contain nitroglycerin, proper and safe methods of thawing are important. It is essential that the heat be moderate, because with increased temperature the explosive is more sensitive to slight shocks, and may even be fired by high temperature alone. Some crude methods, such as carrying in the clothing, placing near a fire or soaking in hot water may be dismissed as obviously unsafe from a consideration of the properties of nitroglycerin

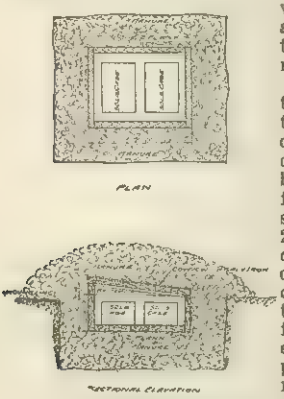


Fig. 26—Thawing Box Surrounded with Manure.

A simple method that is often practical is the placing of the explosive, enclosed in a tight box, under a pile of fresh and warm stable manure, Fig. 26. There is little danger, if any, of overheating, but care must be taken to prevent moisture from reaching the explosive, and the pile must be renewed at intervals, depending on the air temperature.

A considerable improvement is the thawing kettle, which has a capacity of 60 pounds of dynamite for the largest size. In external appearance, it resembles a tin pail, but is composed of two parts, an outer shell for hot water and a tight inner compartment, surrounded by the hot water and containing the explosive. Sometimes insulating material is used to assist in retaining the heat. One type is shown in Fig. 27. It is essential for safety that the heating of the water be completed in another vessel, before the water is placed in the kettle. The temperature should not be greater than can be borne by the hand. A modification of the kettle provides a galvanized iron tube for each cartridge to be thawed, as shown in Fig. 28, instead of placing the cartridges loosely in the inner compartment. By changing the water at intervals, or by protecting against cooling, the explosive may be kept at a temperature suitable for use as long as is generally necessary.

Fig. 27—Miner's Thawing Kettle.

Fig. 28—Tube Thawer.

For thawing large quantities, a thaw house should be erected. An example of such a structure, about 6 feet square and 7 feet high, with capacity of 500 pounds of explosive, is shown in Fig. 29.

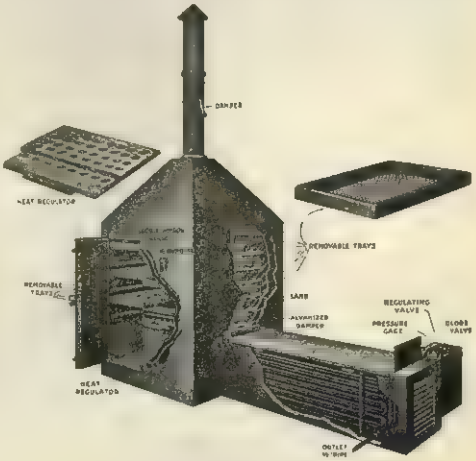


Fig. 29—Thawing House.

Exhaust steam is used for heat, and the steam coils are placed outside the compartment for explosives, in order to keep the temperature within safe limits. Hot water heat is sometimes used.

Storage

It is desirable to use explosives in as fresh a condition as possible, but at most mines the storage of a certain quantity is necessary, and for this purpose, magazines are provided. In no case should the storage space be in the mine. The important requirements are safety from ignition of the ex-

*"Shot Firing in Coal Mines by Electricity Controlled from Outside", Technical Paper 108, Bureau of Mines.
"Shot Firing in Coal Mines by Electric Circuit from the Surface", Transactions American Institute of Mining Engineers, Vol. 50, p. 723.
†"A Setback to Electric Shotfiring", Coal Age, Vol. 2, p. 822.

plosive and preservation of the explosive in condition for use.

Safety from ignition is attained chiefly by making magazines fireproof and bulletproof, as well as proof against thieves, by locating them at a distance from other buildings and frequented places, by using no metal in the interior of the magazine and by care in handling and piling the packages. Preservation of the explosive is accomplished chiefly by ventilation, protection from the weather and maintaining of proper temperature. In no case should detonators of any type be stored in the same magazine with high or permissible explosives, although it is considered safe to store black powder and high or permissible explosives in the same structure, if different parts are assigned for each. An attractive type of magazine is shown in Fig. 30.

Fig. 30. Powder Magazine at No. 2 Colliery, Kingston Coal Co., Kingston, Pa.

Brick walls with iron doors are usually considered to make a fireproof structure, although a galvanized covering over wood is effective, particularly when the space between is filled with sand. Fireproof construction should not be depended on entirely, but provision should be made for removal of the contents in case of fire near the magazine. Either of the above is bulletproof on the sides. and roofs are made so with sand packing. The magazine should be solidly built and provided with a secure lock. The proper distance from other buildings depends on the quantity of explosive stored and the character of intervening ground, but laws bearing on this point aim to leave a safe margin. Floors and interior walls are of wood preferably, exposed nails or other iron or steel being avoided. In handling packages of explosives into and out of the magazine, the character of the explosive must be kept in mind; for example, dynamite must be handled so as to avoid dropping the cases, or allowing anything to drop upon the cases. Dynamite is preferably stored so that the cartridges have their long dimension horizontal, to reduce to a minimum the danger of nitroglycerin leakage. Powder kegs should be stored with the axis horizontal, in order to secure ventilation between the kegs. No packages should be opened in or near a magazine.

Ventilation is necessary in order to keep the explosive in normal condition. Too much moisture or too little moisture is likely to change the chemical composition of either class of explosives. Suitable openings in the sides and roof of the building serve the purpose of ventilation. High explosives magazines are heated in cold weather much as thaw houses are heated. In summer, the ventilation serves to reduce the inside temperature.

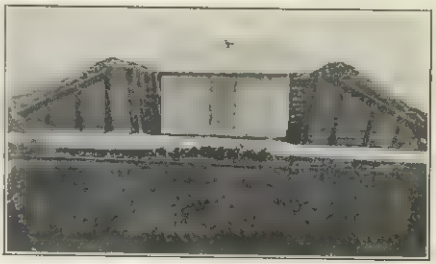


Fig. 31. Barricaded Magazine.

The following Quantity and Distance Table known as "The American Table of Distances" is recommended for the location of magazines. All state laws and local ordinances should also be complied with.

QUANTITY AND DISTANCE TABLE*

Column 1				Column 2	Column 3	Column 4
Quantity that May be Had, Kept or Stored				Distance from Nearest Building	Distance from Nearest Railway	Distance from Nearest Highway
Blasting and Electric Blasting Caps		Other Explosives				
Number Over	Number Not Over	Pounds Over	Pounds Not Over	Feet	Feet	Feet
1 000	5 000			30	20	10
5 000	10 000			60	40	20
10 000	20 000			120	70	35
20,000	25 000			145	90	45
25,000	50,000	50	100	240	140	70
50 000	100 000	100	200	380	220	110
100 000	150 000	200	300	520	310	150
150 000	200,000	300	400	640	380	190
200 000	250,000	400	500	730	430	220
250 000	300 000	500	600	800	480	240
300 000	35 000	600	700	880	520	260
350 000	400 000	700	800	920	550	280
400 000	450,000	800	900	980	590	300
450,000	500,000	900	1,000	1,020	610	310
500 000	750 000	1,000	1,500	1,060	640	320
750 000	1 000 000	1,500	2,000	1,200	720	360
1,000 000	1 500 000	2,000	3,000	1,300	780	390
1 500 000	2 000,000	3,000	4,000	1,420	850	420
2 000 000	2,500 000	4,000	5,000	1,500	900	450
2 500 000	3,000 000	5,000	6,000	1,580	940	470
3 000 000	3 500 000	6,000	7,000	1,610	970	490
3 500 000	4 000 000	7,000	8,000	1,660	1,000	500
4 000 000	4 500 000	8,000	9,000	1,700	1,020	510
4 500 000	5 000,000	9,000	10,000	1,740	1,040	520
5 000 000	7,500 000	10,000	15,000	1,780	1,070	530
7 500 000	10,000,000	15,000	20,000	1,950	1,170	580
10,000 000	12 500,000	20,000	25,000	2,110	1,270	630
12,500 000	15 000 000	25,000	30,000	2,260	1,360	680
15,000 000	17 500 000	30,000	35,000	2,410	1,450	720
17 500,000	20 000,000	35,000	40,000	2,550	1,530	760
		40 000	45 000	2 680	1,610	800
		45 000	50 000	2 800	1,680	840
		50,000	55,000	2 920	1,750	880
		55 000	60 000	3 030	1,820	910
		60,000	65 000	3 130	1,880	940
		65 000	70,000	3 220	1,940	970
		70,000	75 000	3 310	1,990	1,000
		75,000	80 000	3,390	2,040	1,020
		80 000	85,000	3,460	2,080	1,040
		85,000	90,000	3,520	2,120	1,060
		90 000	95 000	3 580	2,150	1,080
		95 000	100 000	3 630	2,180	1,090
		100 00	125 000	3 670	2,200	1,100
		125 000	150 000	3 800	2,280	1,140
		150 000	175,000	3,930	2,360	1,180
		175,000	200 000	4,060	2,440	1,220
		200 000	225,000	4,190	2,520	1,260
		225 000	250 000	4,310	2,590	1,300
		250,000	275,000	4,430	2,660	1 340
		275,000	300 000	4,550	2,730	1,880

*Issued by Institute of Makers of Explosives, 103 Park Ave., New York City

Reduction of Distances—Whenever the building, railroad or highway to be protected is effectually screened from the factory building or magazine, where explosives are had, kept or stored, either by natural features of the ground or by an efficient artificial barricade of such height that any straight line drawn from the top of any side wall of the factory, building or magazine to any part of the building to be protected, will pass through such intervening natural or efficient artificial barricade, and any straight line drawn from the top of any side wall of the factory building or magazine to any point 12 feet above the center of the railroad or highway to be protected will pass through such intervening natural or efficient artificial barricade, the applicable distances given in Columns 2, 3 and 4 of the Quantity and Distance Table may be reduced one-half.

The term "efficient artificial barricade" as used herein, means an artificial mound or properly revetted wall of earth of a minimum thickness of not less than three feet.

Portable steel buildings are sometimes used as magazines. Many of the precautions that should be taken are rendered difficult by this type of construction, but for a temporary magazine they serve their purpose. For storing small quantities close to the work, covered iron wagons or low trucks are sometimes used.

Accidents and Precautions

Fatal accidents due to explosives in the bituminous coal mines of the United States constitute about 5 per cent. to 7.5 per cent. of the total. Classification of accidents from this source is given in the table herewith.*

It is significant that a decrease in accidents accompanies an increase in the quantity of permissibles used.

*"Coal Mine Fatalities in the United States," Bureau of Mines.

Many of the precautions necessary or advisable in the transportation, handling and use of explosives have been mentioned in the pages preceding, and will not be repeated here.

Transportation on the common carriers is controlled by the regulations of the Interstate Commerce Commission and the rules of the American Railway Association. State and local laws govern the transportation elsewhere on surface and underground.

	Per cent.
Handling and transportation	18.73
Handling caps, detonators, squibs and fuse	1.20
Thawing explosives	.72
Tamping	2.97
Premature blast and short fuse	24.87
Blown-out or windy shot	6.47
Flying pieces of rock or coal	16.71
Returned too soon	7.97
Delayed blast	.90
Shot breaking through pillar or rib	5.88
Suffocation by powder gas	3.45
Striking unexploded charge in removing debris	.98
Drilling into unexploded charge	1.88
Unclassified	11.10
	100.00

The mining laws of the several states treat in more or less detail the handling and use of the explosives adapted to mining, and are valuable summaries of safe practice in the fields covered by them.

All manufacturers of explosives are interested in having their products used safely, as well as successfully, and to this end have prepared lists of precautions for the guidance of their patrons. In addition, the Institute of Makers of Explosives has published a set of rules that should be observed faithfully in the interest of safety.

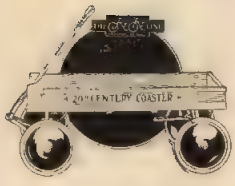
If proper precautions are taken, such as would be dictated by ordinary prudence and suggested by the codes of rules named above, the handling of explosives is comparatively safe.

NOTE—We are indebted to the following manufacturers for cuts and illustrations appearing in this article:

Aetna Explosive Co., Inc.,
Atlas Powder Co.,
Davis Instrument Mfg. Co.,
E. I. du Pont de Nemours & Company,
Hercules Powder Co.

COASTER WAGONS

20TH CENTURY



WOOD BODY

Specifications — Front gears of improved three-point suspension type with fifth wheel turntables. Rear gears steel reinforced with heavy suspension braces

Bodies—Made of well seasoned wood, glued and reinforced with heavy cleats. Top rails. Mortised hard wood bottoms

Handles—Steel loops on specially selected wood. Doubly reinforced at tongues of gears.

Wheels—Double disc, self retained roller bearings, nickel plated hub caps, corrugated rubber tires.

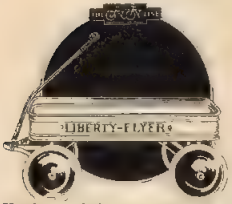
Finish—Natural grain, varnished with wear resisting compound. Artistically decorated by machine. Top rails and edges painted red.

Each

No. 680—16x36 in. body, 10 in. wheels, ¾ in. tires, wt. each 31 lbs. $6.00

One in a carton

LIBERTY FLYER



ALL STEEL

Specifications — Front gear of improved three-point suspension type with fifth wheel turntable. Tongue and gear braces. Rear gear heavy steel reinforced with five-point suspension braces

Body—Heavy sheet steel reinforced with beads, rolls on top and bottom. Heavy gauge one-piece steel platform

Handle—Tubular steel gracefully curved. Steel loop grip.

Wheels—Double disc, self retained roller bearings. Nickel plated hub caps, corrugated rubber tires

Finish—Body and wheels enameled orange or forest green. Lettered in contrasting colors. Gear and handle enameled black.

Each

No. 640—13½x32¾ in. body, 10 in. wheels, ¾ in. tire, weight each 31 lbs. $6.00

One in a carton.

EXPRESS WAGONS

20TH CENTURY

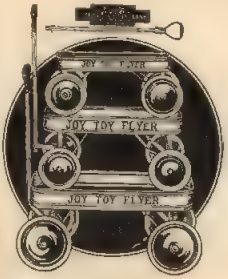
STEEL

Built with a very substantial gear that insures durability. Heavy gauge sheet steel sides with electrically welded joints. Kiln dried bottoms tongued and grooved. Extra strong front and rear braces thoroughly reinforcing gear and body. All four wheels of same diameter.

Finish—Body red, gears and wheels black

Nos.	601	602	603	604
Body, in.	12x6	18x8	22x10	26x12
Wheels, in.	5	6	6	8
Weight per dozen, lbs.	40	60	78	132
No. in carton	6	4	2	2
Per dozen	$15.00	18.00	24.00	30.00

JOY-TOY FLYER



ALL STEEL

Steel, disc wheels, rubber tires, loop handle grips, nickel plated hub caps

Finish—Red outside, green inside, gold stenciled. Gears and wheels black enameled. Wood tongues

⅝ in. Rubber Tires

Nos.	622	623	624
Body, in.	8x18	10x22	12x26
Wheels in	6	6	8
Weight each lbs	5½	7½	12
No. in carton	4	2	2
Each	$1 00	3.50	4.00

ROLLER SKATES

WINSLOW'S BALL BEARING

Nickel plated, fine quality steel, self-contained steel rolls, easy action, rubber cushions, leather strap

Per pair

No. 30½SC—Boys', Full steel back, extends 6 to 8 in., weight per pair 4 lbs. $2 50

No. 38½SC—Men's, Extends from 8 to 10½ in, wt. per pair 4½ lbs. 2.50

One pair in a package.

Nickel plated, first quality steel self-contained, steel rolls, easy action, rubber cushions, leather strap and heel.

Per pair

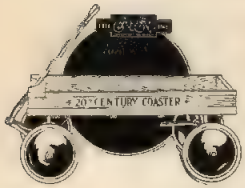
No. 30SC—Girls', Extends from 6 to 8 in. weight per pair 4 lbs ..... $2.5#

No. 38SC—Women's, Extends from 8 to 10½ in., weight per pair 4¼ lbs. 2 50

One pair in a package

COASTER WAGONS

20TH CENTURY



WOOD BODY

Specifications — Front gears of improved three-point suspension type with fifth wheel turntables. Rear gears steel reinforced with heavy suspension braces.

Bodies — Made of well seasoned wood, glued and reinforced with heavy cleats. Top rails. Mortised hard wood bottoms.

Handles—Steel loops on specially selected wood. Doubly reinforced at tongues of gears.

Wheels Double disc, self retained roller bearings, nickel plated hub caps, corrugated rubber tires.

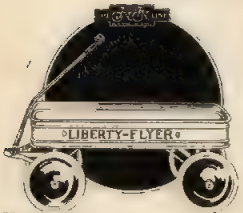
Finish Natural grain, varnished with wear resisting compound. Artistically decorated by machine. Top rails and edges painted red.

Each

No. 680—16x36 in. body, 10 in. wheels, ¾ in. tires, wt each 31 lbs. $6.00

One in a carton.

LIBERTY FLYER



ALL STEEL

Specifications — Front gear of improved three-point suspension type with fifth wheel turntable. Tongue and gear braces. Rear gear heavy steel reinforced with five-point suspension braces.

Body -Heavy sheet steel reinforced with beads, rolls on top and bottom Heavy gauge one-piece steel platform.

Handle Tubular steel gracefully curved. Steel loop grip.

Wheels—Double disc, self retained roller bearings. Nickel plated hub caps, corrugated rubber tires

Finish—Body and wheels enameled orange or forest green. Lettered in contrasting colors. Gear and handle enameled black

Each

No. 640—13½x32¾ in. body, 10 in. wheels, ¾ in. tire, weight each 31 lbs. $6.00

One in a carton.

EXPRESS WAGONS

20TH CENTURY

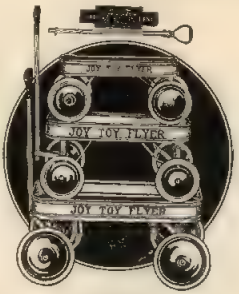
STEEL

Built with a very substantial gear that insures durability. Heavy gauge sheet steel sides with electrically welded joints. Kiln dried bottoms tongued and grooved. Extra strong front and rear braces thoroughly reinforcing gear and body. All four wheels of same diameter.

Finish—Body red, gears and wheels black.

Nos.	601	602	603	604
Body, in.	12x6	18x8	22x10	26x12
Wheels, in.	5	6	6	8
Weight per dozen, lbs.	40	60	72	132
No. in carton	6	4	2	2
Per dozen	$15.00	18.00	24.00	30.00

JOY-TOY FLYER



ALL STEEL

Steel, disc wheels, rubber tires, loop handle grips, nickel plated hub caps.

Finish—Red outside, green inside, gold stenciled. Gears and wheels black enameled. Wood tongues.

⅝ in. Rubber Tires

No.	622	623	624
Body, in.	8x18	10x22	12x26
Wheels, in.	6	6	8
Weight each, lbs.	5½	7½	12
No. in carton	4	2	2
Each	$3.00	3.50	4.00

ROLLER SKATES

WINSLOW'S BALL BEARING

Nickel plated, fine quality steel, self-contained steel rolls, easy action, rubber cushions, leather strap.

Per pair

No. 30½SC—Boys', Full steel back, extends 6 to 8 in., weight per pair 4 lbs. $2.50

No. 38½SC—Men's, Extends from 8 to 10½ in., wt. per pair 4½ lbs 2 50

One pair in a package.

Nickel plated, first quality steel self-contained, steel rolls, easy action, rubber cushions, leather strap and heel

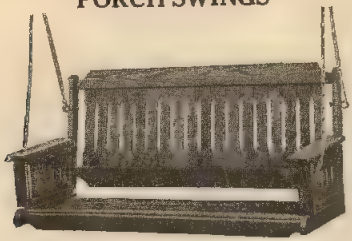
Per pair

No. 30SC—Girls', Extends from 6 to 8 in., weight per pair 4 lbs $2.50

No. 38SC—Women's, Extends from 8 to 10½ in., weight per pair 4¼ lbs. 2 50

One pair in a package

PORCH SWINGS



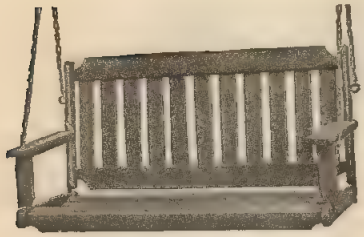
Solid oak, wood parts, steel cross arms with wood facing, 8 ft. galvanized chains with ceiling hooks.

All cross frame work dowelled into ends, shaped seats braced with center support, back and seat fastened together with steel hinges.

Each

No. 6—Height of back 21½ in., length of seat 46 in., back rails and arms, 3½ in. wide, weight each 40 lbs. $6.50

One in a bundle.



Solid oak wood parts, steel arms, with wood facing, eight foot galvanized chains with ceiling hooks.

All cross frame work dowelled into ends, shaped seat braced with center support, back and seat fastened together with steel hinges.

Each

No. 4—Height of back 20 in., length of seat 42 in., back, rails and arms 2½ in. wide, weight each 30 lbs. .. $4.50

Two in a bundle.

SPINNING TOPS

Plain polished wood, with three stripes, red, white and blue.

Per dozen

No. 18-3—Without strings $0.60
No. 18-3-S—With strings ..... .75

Extra Strings ..... .15

Three dozen in a box.

CROQUET SETS

ECLIPSE

Painted and striped balls, mallets and handles.

Per set

No. 04—Eight ball set, two large fancy stakes, galvanized wire arches, 6 in. mallets, weight per set 24 lbs. $6 50

One set in a dove tailed hinge covered box.

Striped balls and mallet, all parts varnished.

Per set

No. 02X—Eight ball set, two four colored stakes, ten arches, 5 in. mallets, wt. per set 21 lbs. $5.00

Varnished balls and stakes, oil mallets.

Per set

No. 01X—Eight ball set, two stakes, ten arches, 5 in. mallets, weight per set 20 lbs. $4.25
No. 01—Four ball set, two stakes, ten arches, 5 in. mallets, wt. per set 12 lbs. 3.25

One set in a dove tailed hinged covered box.

MARBLES

AGATES

Onyx, assorted colors. Perfectly round, uniform in size and clarity, hard as flint.

Akro

Nos.	0	1	2	3	4
Approx. diameter, in.	5/8	11/16	3/4	13/16	7/8
Weight per 1000, lbs.	14	16	23	27	35
No. in a box	100	100	50	50	50
Per 100	$1.05	1.13	1.35	1.53	1.88
Per 1000	9.45	10.05	12.15	14.25	16.88

Cardinal Red

Nos.	0	1	2	3	4
Approx. diameter, in.	5/8	11/16	3/4	13/16	7/8
Weight per 1000, lbs.	14	16	23	27	35
No in a box	25	25	25	25	25
Per 100	$2.10	2.25	2.70	3.15	3.75
Per 1000	19.73	20.35	24.90	29.40	34.35

MESH BAGS

Per dozen bags

No. 40 — Contains 40 7/8 in., assorted colors marbles $0.60
28 bags in a carton.

No. 75 — Contains 75 7/8 in. assorted colors marbles 1.20
18 bags in a carton.

BOWLERS

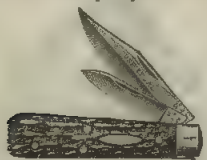
Per bag

No. 3—1 in. diameter, assorted colors, 200 in a muslin bag $1.00

50 bags in a barrel.

Universal.

All Universal pocket knife blades and springs are made of Wardlow's best pocket knife steel, properly forged and tempered to a uniform hardness best adapted for hard usage and long service. Each knife blade is hand sharpened and honed, assuring a lasting and keen cutting edge. Universal pocket knives carry an unlimited guarantee as to excellence of quality and workmanship.

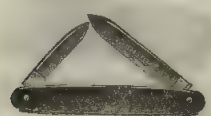


3½-inch stag handle; 2⅝-inch large saber chip blade; 1½-inch spear large saber clip blade; 1 3-16 inch lined; iron bolster and nickel silver shield.

No. 02125⅝—Weight, per dozen, 2⅛ lbs. Per dozen.....$9.00

3⅝-inch cocobolo handle; 2⅛-inch large clip blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; iron bolster cap and shield.

No. 2247⅜—Weight, per dozen 1⅝ lbs. Per dozen.....$11.00



3¼-inch gun metal handle; 1¾-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; flat vest pocket pattern and size.

No. 12276—Weight, per dozen, ⅝ lb. Per dozen.....$11.00

Elks.

No. 12276E—Otherwise as above. Per dozen $12.00

Masonic.

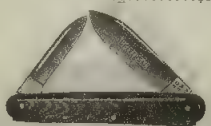
No. 12276M—Otherwise as above. Per dozen $12.00

Shriner.

No. 12276S—Otherwise as above. Per dozen $12.00

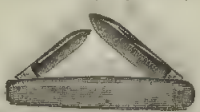
3½-inch cocobolo handle; 2½-inch large clip blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; iron bolster.

No. 22125⅝—Weight, per dozen, 2 lbs. Per dozen.....$9.00



3⅜-inch buffalo ivoroy handle; 1⅞-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined.

No. 42107—Weight, per dozen, ⅞ lb. Per dozen $12.00



3⅜-inch ivoroy handle; 1⅞-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined.

No. 52107—Weight, per dozen, 1 lb. Per dozen $10.00

3¼-inch ivoroy handle; 2⅝-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; iron bolster and nickel silver shield.

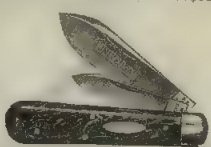
No. 52125—Weight, per dozen, 2 lbs. Per dozen.....$10.25

3-inch pearl celluloid handle; 2⅛-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; nickel silver bolster, cap and shield; brass lined.

No. 8250—Weight, per dozen, 1 lb. Per dozen $11.50

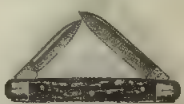
3-inch celluloid pearl handle; 1⅝-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters.

No. 8261—Weight, per dozen, ¾ lb. Per dozen $11.50



3½-inch buffalo ivoroy handle; 2¾-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; iron bolster and nickel silver shield.

No. 42125—Weight, per dozen, 2 lbs. Per dozen.....$10.50



3-inch stag handle; 1⅝-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters

No. 0261—Weight, per dozen, ¾ lb. Per dozen $11.00

All above, one-half dozen in a box.

POCKET KNIVES

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3⅝-inch stag handle; 2⅝-inch large spear blade; 1½-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 0246—Weight, per dozen, 1⅞ lbs. Per dozen.....$12.00

No. 0246¾—With 2⅝-inch large clip blade, otherwise same as above. Per dozen 12.00

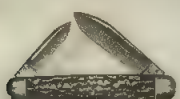
3⅝-inch stag handle; 2⅝-inch large spear blade; 1½-inch spear pen blade; brass lined; iron bolster, cap and nickel silver shield.

No. 0247—Weight, per dozen, 1⅝ lbs. Per dozen.....$11.00

No. 0247¾—With 2¼-inch large clip blade, otherwise same as above. Per dozen 11.00

3-inch stag handle; 1½-inch large spear blade; 1¼-inch wharncliff pen blade; high glazed finish; brass lined; nickel silver bolsters.

No. 02309—Weight, per dozen, ⅝ lb. Per dozen.....$11 00



3-inch stag handle; 1⅝-inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters.

No. 02337—Weight, per dozen, ⅝ lb. Per dozen.....$11.00

3⅝-inch Granadilla handle; 2¼-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; iron bolster and cap and nickel silver shield.

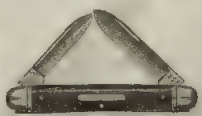
No. 2247—Weight, per dozen, 1¾ lbs. Per dozen.....$11.00

3-inch tortise celluloid handle; 1½-inch large spear blade; 1⅛-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters.

No. 82309—Weight, per dozen, ⅝ lb. Per dozen.....$11.50

3-inch white ivoroy handle; 1⅝-inch large spear blade; 1¼-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolsters.

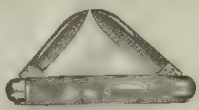
No. 5261—Weight, per dozen, ¾ lb. Per dozen $11.50



3¼-inch buffalo ivoroy handle, 1¾-inch large spear blade; 1¼-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolsters.

No. 42144—Weight, per dozen, ⅞ lb. Per dozen.....$12.45

All above, one-half dozen in a box.

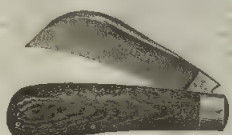


3¼-inch pearl celluloid handle; 1⅝-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 82144—Weight, per dozen. ⅞ lb. Per dozen.....$12.40

3¼-inch stag handle; 1⅝-inch large spear blade; 1¼-inch spear pen blade; brass lined; steel ribbed bolsters and nickel silver shield.

No. 02144—Weight, per dozen. ⅞ lb Per dozen.....$12.00



4-inch Granadilla handle; 2¾-inch pruning blade; high glazed finish; iron lined; iron bolster.

No. 2132—Weight, per dozen, 2⅝ lbs. Per dozen.....$11 50

3¼-inch white ivoroy handle; 1⅝-inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 52144—Weight, per dozen, 1 lb. Per dozen $12.45

POCKET KNIVES

Universal.

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3¼-inch buffalo ivoroy handle; 2 5-16 inch large spear blade; 1½-inch small pen blade; fine glazed finish; brass lined; nickel silver bolster and shield.

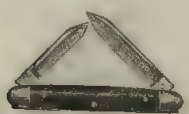
No. 4243—Weight, per dozen, 1½ lbs. Per dozen.....$11.50

3¼-inch buffalo ivoroy handle; 2 5-16 inch large spear blade; 1½-inch small pen blade; fine glazed finish; brass lined; nickel silver bolster and shield. Has chain attached.

No. 4243-CH—Weight, per dozen, 2 lbs. Per dozen..... $12 60

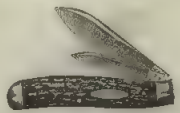
3½-inch Granadilla handle; 2¼-inch large spear blade; 1¾-inch punch blade; high glazed finish; brass lined; iron bolster and nickel silver shield.

No. 20125—Weight per dozen 2½ lbs. Per dozen.....$11.00



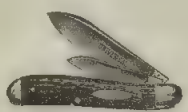
3-inch buffalo ivoroy handle; 1¾-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; nickel silver bolsters; brass lined.

No. 4261—Weight, per dozen, ¾ lb. Per dozen $11.50



3-inch stag handle; 1⅞-inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 02623—Weight, per dozen, 1⅛ lbs. Per dozen.....$11.50

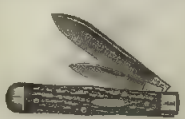


3-inch ebony handle; 1⅞-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 32623—Weight, per dozen, 1⅛ lbs. Per dozen.....$11.50

3-inch ebony handle; 2⅛-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

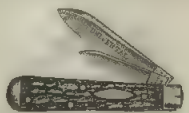
No. 32205—Weight, per dozen, 1⅛ lbs. Per dozen.....$12.00



3-inch stag handle; 2⅛-inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 0251—Weight, per dozen, 1⅛ lbs. Per dozen.....$12.00

All above, one-half dozen in a box.

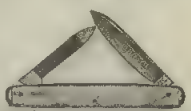


3-inch stag handle; 2-inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 02205—Weight, per dozen, 1¼ lbs. Per dozen.....$11.50

3¾-inch Ebony handle; 2¼-inch large spear blade; high glazed finish; brass lined; iron bolster and cap; nickle plated shield.

No. 3047—Weight, per dozen, 1⅝ lbs. Per dozen.....$12.00



3⅛-inch pearl celluloid handle; 1¾-inch large spear blade; nail file blade; high glazed finish; brass lined; nickel silver tips.

No. 82425—Weight, per dozen, ½ lb. Per dozen.....$12.00

3¼-inch perfected stag handle; 2⅛-inch large clip blade; 1½-inch spear pen blade; fine glazed finish; brass lined; steel bolster cap and shield.

No. 02154¾—Weight, per dozen, 1¾ lbs. Per dozen.....$12.00

2126 POCKET KNIVES

Universal.

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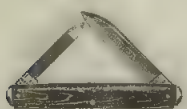
3-inch perfected stag handle; 1⅝-inch large spear blade; 1¼-inch spear blade; fine glazed finish; brass lined; nickel silver tips.

No. 02425—Weight, per dozen, ⅝ lb. Per dozen $11.50

3¼-inch ebony handle; 2⅛-inch large spear blade; 1½-inch spear pen blade; fine glazed finish; brass lined nickel silver bolsters and shield.

No. 32154—Weight, per dozen, 1¾ lbs. Per dozen.....$12.00



3-inch buffalo ivoroy handle; 1⅝-inch large spear blade; 1 3-16 inch spear pen blade; fine glazed finish; brass lined; nickel silver tips.

No. 42425—Weight, per dozen, ¾ lb. Per dozen.....$12.00

4⅛-inch white ivoroy handle; 1⅝-inch budding blade; fine glazed finish.

No. 51210—Weight, per dozen, ⅝ lb. Per dozen.....$12.45

3-inch buffalo ivoroy handle; 2-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 42205—Weight, per dozen, 1⅛ lb. Per dozen.....$11 50

No. 62205—With rosewood celluloid handle, otherwise same as No. 42205. Per dozen $12.45

3-inch tortise celluloid handle; 1⅞-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 82623—Weight, per dozen, 1⅛ lbs. Per dozen.....$12.45

3-inch pearl celluloid handle; 2⅛-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; nickel silver bolster, cap and shield.

No. 8251—Weight, per dozen, 1 lb. Per dozen $12.00

3-inch buffalo handle; 2⅛-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 4251—Weight, per dozen, 1⅛ lbs. Per dozen.....$12.45

3-inch buffalo ivoroy handle; 1¾-inch large spear blade; 1-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 42490—Weight, per dozen, ⅝ lb. Per dozen.....$12.00

3½-inch ebony handle; 2½-inch large spear blade; 1⅝-inch spear pen blade; biggh glazed finish; brass lined; nickel silver bolster and shield; easy opener.

No. 32266—Weight, per dozen, 1¾ lb. Per dozen.....$12.00

3-inch nickel silver handle; 1⅝-in. large spear blade; 1¼-inch file blade; fine glazed finish; flat pattern with shackle.

No. 12425—Weight, per dozen, ⅝ lbs. Per dozen.....$12.00

3⅞-inch ebony handle; 2¹₁ inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 3246—Weight, per dozen, 1¾ lb. Per dozen.....$12.00

All above, one-half dozen in a box.

POCKET KNIVES

Universal.

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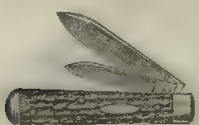
3⅝-inch ebony handle; 2¼-inch large clip blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 3246¾—Weight, per dozen, 1¾ lbs. Per dozen.....$12.00

3⅝-inch buffalo ivoroy handle; 1⅞-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; nickel silver bolsters.

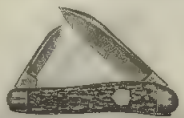
No. 42109—Weight, per dozen, 1 lb. Per dozen $11.50

No. 52109—3⅝-inch white, ivoroy handle; 1⅞-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; nickel silver bolsters. Weight, per dozen, 1 lb. Per dozen...$11.50



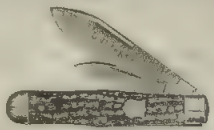
3¼-inch stag handle; 2¼-inch large spear blade; 1½-inch spear pen blade; high glazed finish; brass lined; steel bolster, cap and nickel silver shield.

No. 02105—Weight, per dozen, 1⅝ lbs. Per dozen.....$12.00



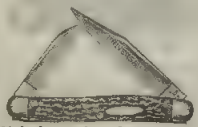
3-inch stag handle; 1¾-inch large spear blade; 1-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 02490—Weight, per dozen, ¾ lb. Per dozen.....$11.50



3½-inch perfected stag handle; 2½-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; iron bolsters.

No. 02206—Weight, per dozen, 1⅞ lbs. Per dozen.....$12.45

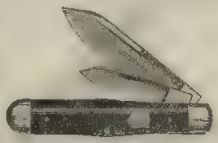


3¼-inch perfected stag handle; 2½-inch large clip blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolsters and shield.

No. 02633—Weight, per dozen, 1 lb. Per dozen $13 00

3-inch buffalo ivoroy handle; 2¼-inch large spear blade; 1⅜-inch spear pen blade; fine glazed finish; brass lined; iron bolsters, cap and shield.

No. 4254—Weight, per dozen, 1¼ lbs. Per dozen.....$12.45

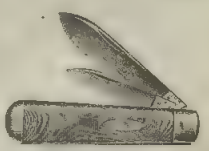


3½-inch ebony handle; 2½-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; iron bolsters and shield.

No. 32206—Weight, per dozen, 1¾ lbs. Per dozen.....$12.45

3⅝-inch buffalo ivoroy handle; 2⅛-inch large spear blade; 1⅛-inch spear pen blade; fine glazed finish, brass lined; nickel silver bolsters.

No. 42185—Weight, per dozen, 1 lb. Per dozen $13 15



3 5-16 inch red composition handle; 2¼-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; bolster, cap and shield.

No. 8246R—Weight, per dozen, 1¾ lbs. Per dozen.....$13.00

No. 8246Y—Green composition handle, otherwise same as above. Per dozen $13.00

All above, one-half dozen in a box.

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3 9-16 inch red composition handle; easy opener; 2⅝-inch large spear blade; 1½-inch spear pen blade; fine glazed finish; iron bolsters, cap and shield.

No. 82100R—Weight, per dozen, 2¼ lbs. Per dozen.....$13 15

Punch Blade.
(See No. 00266 page 2130 for illustration.)

3⅛-inch ebony handle; 2½-inch large spear blade; 1⅝-inch gouge blade; high glazed finish; brass lined; nickel silver bolster and shield.

No. 30266—Weight, per dozen, 1¾ lbs. Per dozen.....$12 00

3½-inch stag handle; 2½-inch large spear blade; 1¾-inch gouge blade; high glazed finish; brass lined; nickel silver bolster and shield.

No. 00266—Weight, per dozen, 2 lbs. Per dozen.....$13.00

3⅝-inch stag handle; 2⅝-inch large spear blade; 1¾-inch spear pen blade; high glazed finish; brass lined; iron bolster and cap, and nickel silver shield.

No. 02239—Weight, per dozen, 2¼ lbs. Per dozen.....$13.00

3⅝-inch stag handle; 2⅝-inch large clip blade; 1¾-inch spear pen blade; high glazed finish; brass lined; steel bolster and cap, and nickel silver shield.

No. 02239¾—Weight, per dozen, 2¼ lbs. Per dozen.....$13.00

3½-inch stag handle; 2¼-inch large spear blade; 1½-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 02290—Weight, per dozen, 1½ lbs. Per dozen.....$12.45

3½-inch stag handle; 2⅝-inch large spear blade; 1¾-inch spear pen blade; high glazed finish; brass lined; iron bolster and cap, and nickel silver shield.

No. 02640—Weight, per dozen, 2¼ lbs. Per dozen.....$12.00

All above, one-half dozen in a box.

3¼-inch celluloid pearl handle; 2⅝-inch large spear blade; 1⅜-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 82222—Weight, per dozen, 1¼ lbs. Per dozen.....$13.15

3⅝-inch Granadilla handle; 2½-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; steel bolster and cap, and nickel silver shield; easy opener.

No. 22100—Weight, per dozen. 2½ lbs. Per dozen.....$12.00

3½-inch Granadilla handle; 2⅝-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield

No. 22640—Weight, per dozen, 2 lbs. Per dozen.....$12.00

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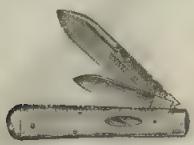


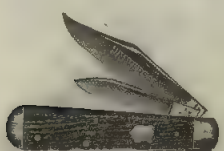
3⅝-inch ivoroy handle; 2¼-inch spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 5246—Weight, per dozen, 1¾ lbs. Per dozen.....$12.45

No. 6246—Rosewood celluloid handle; otherwise same as No. 5246. Per dozen $12.45

3⅝-inch Granadilla handle; 2⅝-inch large spear blade; 1⅞-inch spear pen blade; high glazed finish; brass lined; iron bolster and cap, nickel silver shield.

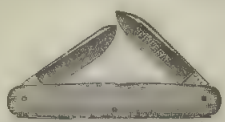
No. 22239—Same as No. 22238, but steel bolsters and cap. Dozen $13.20



3⅝-inch Granadilla handle; 2⅝-inch large clip blade; 1⅞-inch spear pen blade; high glazed finish; brass lined; iron bolster, cap and shield.

No. 22239¾—Same as No. 22238¾, except with steel bolsters and cap. Per dozen $13.20

3½-inch Granadilla handle; 2½-in. large spear blade; 1⅛-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 22267—Weight, per dozen, 1⅝ lbs. Per dozen.....$13.20

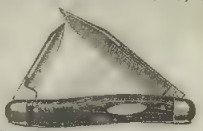


3¾-inch ivoroy handle; 1⅞-inch large spear blade; 1⅝-inch office blade; high glazed finish; brass lined; engraved "Office Knife."
No. 52463—Weight, per dozen, 1¾ lbs. Per dozen.....$12.45

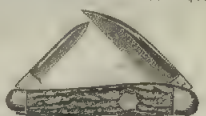
3-inch perfected stag handle; 2-inch large spear blade; 1⅝-inch small pen blade; fine glazed finish; nickel silver bolster, cap and shield; brass lined.
No. 0254—Weight, per dozen, 1½ lbs. Per dozen.....$12.00

3½-inch stag handle; 2¾-inch large sheep foot blade; 1½-inch small pen blade; brass lined; fine glazed finish; nickel silver bolster and shield. Boy Scout etched on shield, with shackle.
No. 02266½—Weight, per dozen, about 2¼ lbs. Per dozen....$12.00

3⅝-inch buffalo handle; 2¼-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 42629—Weight, per dozen, 1¾ lbs. Per dozen.....$13.50



3¼ inch buffalo ivoroy handle; 2⅛-inch large clip blade; 1¾-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.
No. 42633—Weight, per dozen, ¾ lb. Per dozen.....$13.50



3⅝-inch stag handle; 1⅞ inch large Wharncliffe blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.
No. 0288—Weight, per dozen, 1 lb. Per dozen.....$14.00

3⅝-inch stag handle; 2⅛-inch large spear blade; 1⅞-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 0264—Weight, per dozen, 2½ lbs. Per dozen.....$13.00

All above, one-half dozen in a box.

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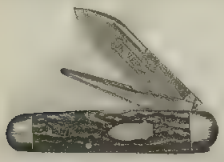
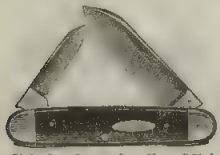
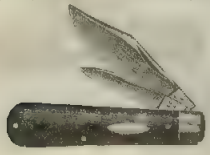


3⅝-inch stag handle; 2⅝-inch large spear blade; 1⅞-inch gouge blade; high glazed finish; brass lined; iron bolster and cap; nickel silver shield.
No. 0064—Weight, per dozen, 2½ lbs. Per dozen.....$14.00

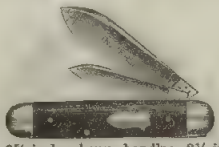


3⅝-inch ebony handle; 2⅝-inch large spear blade; 1½-inch spear pen blade; high glazed finish; brass lined.
No. 3265—Weight, per dozen, 2⅝ lbs. Per dozen.....$14.00

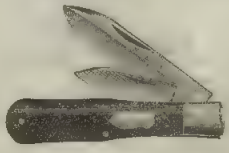
3¾-inch ebony handle; 2½-inch large saber spear blade; 1¾-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster and shield.
No. 3278½—Weight, per dozen, 2⅝ lbs. Per dozen.....$18.00



No. 2244—3⅜-inch cocobolo handles; 2¼-inch spear blade; 1½-inch pen blade; brass lined; weight, per dozen, 1⅝ lbs. Per dozen....$8.00
No. 2244¾—Same as No 2244, except clip blade instead of large spear. Per dozen.....$8.00
No 3244—Same as No 2244, except has ebony handles. Dozen..$8.00
No. 3244¾—Same as No. 3244, except 2¼-inch clip blade. Dozen..$8.00
No. 0244—Same as No. 2244, except stag handles. Per dozen.....$8.00
No. 0244¾—Same as No. 0244 except 2¼-inch large clip blade. Per dozen.....$8.00



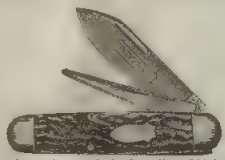
3⅝-inch ebony handle; 2½-inch large spear blade; 1¾-inch spear pen blade; high glazed finish; brass lined, nickel silver bolster, cap and shield.
No. 3264—Weight, per dozen, 2⅝ lbs. Per dozen.....$13.50



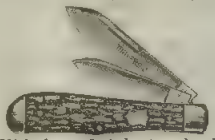
3¾-inch buffalo ivoroy handle; 2⅝-inch large sabre spear blade; 1¾-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster and shield.
No. 4278½—Weight, per dozen, 2⅝ lbs. Per dozen.....$13.50

3¾-inch perfected stag handle; 2⅝-inch large saber spear blade; 1⅞-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolster and shield.
No. 0278½—Weight, per dozen 2¾ lbs. Per dozen.....$13.00
No. 4078½—Same as No. 4278½ except punch blade in place of small pen blade. Per dozen.....$15.00

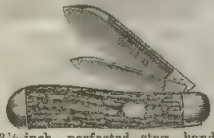
All above, one-half dozen in a box.



3⅝-inch cocobolo handle; 2½-inch large spear blade; 1⅞-inch belt punch; fine glazed finish; brass lined; iron bolsters.
No. 2064—Weight, per dozen, 2⅛ lbs. Per dozen.....$14.00



3½-inch perfected stag handle; 2⅝-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; spear pen blade; fine glazed finish.
No. 02301—Weight, per dozen, 1¾ lbs. Per dozen.....$13.00



3½ inch perfected stag handle; 2⅝-inch large spear blade; 1¾-inch spear pen blade; fine glazed finish.
No. 02641—Weight, per dozen, 1⅞ lbs. Per dozen.....$13.00

3⅝-inch ebony handle; 2¾-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 32102—Weight, per dozen, 2¼ lbs Per dozen.....$13.50

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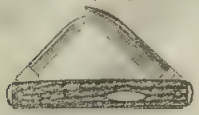


3¼-inch stag handle; 1¾-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver tips and shield.

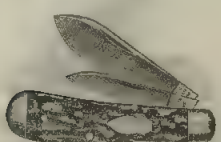
No. 02276—Weight, per dozen, ¾ lb. Per dozen.....$12.45

3⅝-inch celluloid pearl handle; 1⅝-inch large Wharncliff blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 8288—Weight, per dozen, 1 lb. Per dozen $14.70

3⅝-inch stag handle; 2¼-inch large spear blade; 1⅝-inch spear pen blade; brass lined; high glazed finish; nickel silver bolster, cap and shield.

No. 02102—Weight, per dozen, 2¼ lbs. Per dozen.....$13.50



3⅝-inch stag handle; 2⅜-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 02403—Weight, per dozen, 2½ lbs. Per dozen.....$13.50

3⅝-inch buffalo ivoroy handle; 2½-inch large spear blade; 1¾-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 4264—Weight, per dozen, 2¾ lbs. Per dozen $13.50

3⅝-inch stag handle; 2¾-inch large spear blade; 2¾-inch large clip blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 02736—Weight, per dozen, 2 lbs. Little Jumbo. Per dozen.$16.00

3¾-inch buffalo ivoroy handle; 2½-inch large spear blade; 2½-inch large clip blade; fine glazed finish; brass lined; nickel silver bolsters and shield.

No. 42335¾—Weight, per dozen, 2¾ lbs. Per dozen . ..$15.00

3¾-inch stag handle; 2⅝-inch large clip blade; 2⅝-inch large spear blade; high glazed finish; brass lined; nickel silver bolsters and shield.

No. 02335¾—Weight, per dozen, 2½ lbs. Per dozen.....$16.00

3⅜-inch green indestructible composition handle; 2¾-inch large clip blade; 1½-inch small pen blade; fine glazed finish; brass lined; polished inside springs; nickel silver bolster, cap and shield; diagonal bolsters.

No. 8275G—Weight, per dozen, 1¾ lbs. Per dozen.....$14.70

3⅜-inch red indestructible ivoroy handle; 2⅜-inch large clip blade; 1½-inch small pen blade; fine glazed finish; brass lined; polished inside springs; nickel silver bolster, cap and shield; diagonal bolsters.

No. 8275R—Weight, per dozen, 1¾ lbs. Per dozen.....$14.70

3⅜-inch gold indestructible composition handle; 2⅜-inch large clip blade; 1½-inch small pen blade; fine glazed finish; brass lined; polished inside springs; nickel silver bolster, cap and shield; diagonal bolsters.

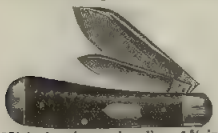
No. 8275Y—Weight, per dozen, 1¾ lbs. Per dozen.....$14.70

All above, one-half dozen in a box

POCKET KNIVES

Universal.

All Universal pocket knife blades and springs are made of Wardlow's best pocket knife steel, properly forged and tempered to a uniform hardness best adapted for hard usage and long service. Each knife blade is hand sharpened and honed, assuring a lasting and keen cutting edge. Universal pocket knives carry an unlimited guarantee as to excellence of quality and workmanship.



3⅝-inch ebony handle; 1⅝-inch large spear blade; 1¾-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolsters and shield.
No. 32403—Weight, per dozen, 2¼ lbs. Per dozen.....$13.50

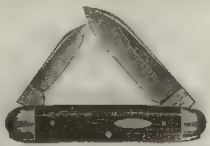
3¾-inch buffalo ivoroy handle; 2½-inch large spear blade; 1¾-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 42335—Weight, per dozen. 2 lbs. Per dozen.....$14.50

3½-inch buffalo ivoroy handle; 2¼-inch large spear blade; 1⅝-inch spear pen blade; fine glazed finish; brass lined; nickel silver bolsters, cap and shield.
No. 42615—Weight, per dozen, 2 lbs. Per dozen $15.00

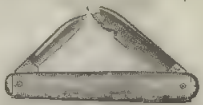
3⅝-inch buffalo ivoroy handle; 2¾-inch large spear blade; 1⅞-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.

No. 42626—Weight, per dozen, 1½ lbs. Per dozen.....$14.00

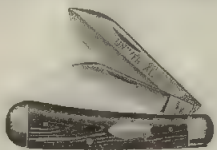
3¼-inch buffalo ivoroy handle; 1¾-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver tips and shields.
No. 42276—Weight, per dozen. ¾ lb. Per dozen.....$13.15



3½-inch buffalo handle; 2⅛-inch large spear blade; 1½-inch spear pen blade; high glazed finish; brass lined; nickel silver bolsters and shield.
No. 42290—Weight, per dozen, 1½ lbs. Per dozen $13.15



3⅝-inch pearloid handle; 1⅞-inch large spear blade; 1¼-inch spear pen blade; high glazed finish; brass lined; nickel silver tips.
No. 82108—Weight, per dozen, ⅞ lb. Per dozen $12.40

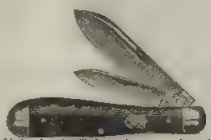


3¾-inch buffalo ivoroy handle; 2½-inch large saber blade; 1⅜-inch small pen blade; nickel silver bolster, cap and shield; high glazed finish; brass lined.

All above, one-half dozen in a box.

No. 42403½—Weight, per dozen, 2 lbs. Per dozen $15.00

3⅝-inch ebony handle; 2½-inch large spoon blade; 1½-inch gouge blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 30102—Weight, per dozen, 2¼ lbs. Per dozen $14.70



3½-inch buffalo ivoroy handle; 2⅝-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 42301—Weight, per dozen, 1¾ lbs Per dozen.....$13.50

3½-inch buffalo ivoroy handle; 2⅝-inch large spear blade; 1⅝-inch spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 42641—Weight, per dozen, 2 lbs. Per dozen.....$13.50

Universal.

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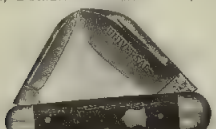
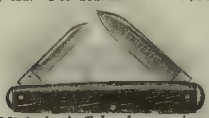
3½-inch stag handle; 2½-inch large spear blade; extra wide and thick; 1½-inch spear pen blade; brass lined; high glazed finish; nickel silver bolsters and shield.
No. 02645—Weight, per dozen, 2 lbs., 2-blade. Per dozen....$17.00

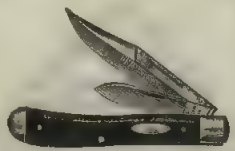


3½-inch ebony handle; 2-inch large spear blade; 1½-inch spear pen blade; high glazed finish; nickel silver bolsters and shield; 2-blade Small Jumbo.
No. 32645—Weight, per dozen, 2 lbs. Per dozen $17.00

3⅝-inch perfected stag handle; 2½-inch large spear blade; 2½-inch large spey blade; fine glazed finish; sunk joint; nickel silver bolsters and shield.
No. 02214¾—Weight, per dozen, 2¼ lbs. Per dozen. . .$16.00



3⅜-inch buffalo ivoroy handle; 2-inch large spear blade; 1⅜-inch spear pen blade; fine glazed finish; brass lined; nickel silver tips.
No. 42108—Weight, per dozen, ⅞ lb. Per dozen.....$12.45



3¾-inch ebony handle; 2¾-inch large sabre clip blade; 1⅛-inch spear pen blade; brass lined; nickel silver bolster, cap and shield.
No. 32637⅞—Weight, per dozen, 1¼ lbs. Per dozen.....$15.70

3⅞-inch stag handle; 2¾-inch large saber clip blade; 1¾-inch spear pen blade; brass lined; high glazed finish; nickel silver cap, bolster and shield.
No. 0263⅞—Weight, per dozen, 2¾ lbs. Per dozen.....$16.50

3⅞-inch stag handle; 2¾-inch large spear blade; 1¾-inch spear pen blade; brass lined; high glazed finish; nickel silver cap, bolster and shield.
No. 0263—Weight, per dozen, 2¾ lbs. Per dozen.....$16.00

3⅝-inch green composition handle; 2⅝ inch large spear blade; 2⅜-inch large clip blade; fine glazed finish; brass lined; nickel silver diagonal bolsters and shield.
No. 82216G—Weight, per dozen, 1¾ lbs. Per dozen $17.50
No. 82216R—Same as No. 82216G, except red composition handle. Per dozen $17.50

All above, one-half dozen in a box.

3-inch buffalo ivoroy handle; 1⅝ inch large spear blade; 1 3-16 inch spear pen blade; 1¼-inch nail file blade; high glazed finish; brass lined; nickel silver bolsters.
No. 4361—Weight, per dozen, ⅞ lb. Per dozen $18.00

3¾-inch buffalo horn handle; 2⅝-inch large saber spear blade; 1¾-in. spear pen blade; high glazed finish; brass lined; nickel silver bolster, cap and shield.
No. 4263⅛—Weight, per dozen, 2¾ lbs. Per dozen.....$17.00

3¾-inch buffalo horn handle; 2⅝-inch large saber clip blade; 1¾-inch spear pen blade; fine glazed finish; nickel silver bolster, cap and shield.
No. 4263⅜—Weight, per dozen, 2¾ lbs. Per dozen.....$17.00

POCKET KNIVES

Universal.

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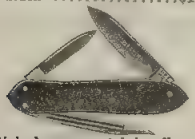
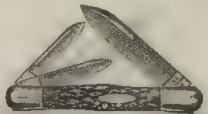
3-inch perfected stag handle; 1 ¾-inch large spear blade; 1 3 16 inch spear pen blade; 1¼-inch nail file; fine glazed finish; brass lined; nickel silver bolsters.
No. 0361—Weight, per dozen, ⅞ lb. Per dozen $17.50



3⅛-inch gun metal handle; 1⅝-inch large spear blade; 1 3-16 inch spear pen blade; 1⅞-inch nail file; fine glazed finish; flat vest pocket pattern and size.
No. 13632—Weight, per dozen, ⅝ lb. Per dozen $13.20

3-inch buffalo ivoroy handle; 1⅝-inch large spear blade; 1 3-16 inch spear pen blade; 1 3-16 inch nail file blade; fine glazed finish; brass lined; nickel silver tips.
No. 43425—Weight, per dozen, ¾ lb. Per dozen.....$17.55

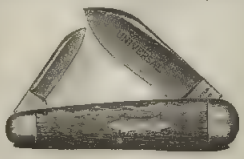
3¼-inch perfected stag handle; 1⅞-inch large spear blade; 1⅝-inch spear pen blade; 1⅜-inch nail file blade; fine glazed finish; brass lined; nickel silver bolsters and shield.
No. 03144—Weight, per dozen 1¼ lbs. Per dozen.....$19.15



3⅝-inch perfected stag handle; 2⅛-inch large spear blade; two 1 5-16 inch spear pen blades; fine glazed finish; brass lined; nickel silver bolsters and shields.
No. 0352—Weight, per dozen, 1¼ lbs. Per dozen.....$21.00

3-inch perfected stag handle; 1⅞-inch large spear blade; 2-inch nail file blade; fine glazed finish; brass lined; nickel silver tips.
No. 02617—Weight, per dozen, ¾ lb. Per dozen.....$17.50

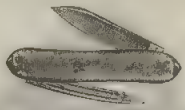
3¼-inch perfected stag handle; 2¼-inch large clip blade; 1 7-16 inch spey blade; 1½-inch sheep foot blade; fine glazd finish; brass lined; nickel silver blosters and shield.
No. 03633¾—Weight, per dozen, 1⅝ lbs. Per dozen.....$19.50



4-inch Granadilla handle; 2⅝-inch large jumbo shaped blade; 1 7-16 inch small pen blade; fine glazed finish and etched Universal; brass lined; nickel silver bolsters and shield.
No. 0233—Perfected stag handle. Weight, per dozen, 2⅝ pounds. Otherwise same as above. Per dozen $19.50

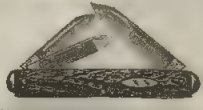
All above, one-half dozen in a box.

5½-inch ebony handle; 3¾-inch large saber clip blade; high glazed finish; brass lined; iron bolster and cap.
No. 31179—Weight, per dozen, 5 lbs. Per dozen.....$19.80



3-inch pearloid handle; 1⅞-inch large spear blade; 2-inch nail file blade; fine glazed finish; brass lined; nickel silver tips and shield.
No. 32617—Weight, per dozen, ⅞ lb. Per dozen.....$18.00

3½-inch stag handle; 2½-inch large clip blade; 1⅞-inch spey blade; 1⅜-inch sheep foot blade; fine glazed finish and etched; brass lined; nickel silver bolsters and shield.
No. 03635¼—Weight, per dozen, 1¼ lbs. Per dozen.....$20.50



3¼-inch stag handle; 1⅝-inch large spear blade; 1¼-inch spear pen blade; 1¼-inch nail file blade; fine glazed finish, brass lined; nickel silver tips and shield.
No. 03276—Weight, per dozen, 1 lb. Per dozen $19.15

STEEL SQUARING MACHINES

Peerless.

Steel construction throughout.

Highest grade of material and workmanship.

Treadles consist of a very simple arrangement and are built so that pressure, no matter where applied, is equally and automatically distributed, allowing of no breaking or twisting of treadles.

Front, back, bevel and side gauges.

Steel hold down works automatically with top cutting bar.

Shear blade of the highest grade steel suitable for the purpose. Blade can be easily removed for grinding and is adjustable to take up wear.

Guaranteed to cut No. 20 gauge soft steel, but will cut as heavy as No. 18 gauge if necessary.

The cutting edge of these machines is slightly longer than sizes given in order to allow the cutting of sheets at a slight angle.

All working parts adjustable.

Cuts 18-Gauge and Lighter Soft Steel. Foot Power.

No.			‡1
Capacity, inches			30
Shipping weight, lbs			360
Each			$125.00
Nos.	‡2		‡3
Capacity, inches	36		42
Shipping weight, lbs	450		600
Each	$150.00		$175.00
Nos.	‡6	‡8	‡10
Capacity, inches	72	96	120
Shipping weight, lbs			
Each	$225.00	$400.00	
Shipping weight, lbs			2,000
Each	$475.00	$550.00	$625.00

Automatic back gauge for any of above machines. Each $75.00

"Peerless."

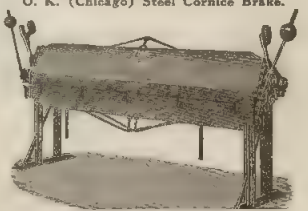
Cast iron shears, equipped with specially constructed steel treadle, otherwise the same as other makes of cast machines, is very well constructed.

‡No. 01—30 inch blade, 18 gage cap. Shipping weight, 560 pounds. Each $110.00

‡No. 02—36 inch blade, 18 gage cap. Shipping weight, 640 pounds. Each 125.00

CORNICE BRAKES

O. K. (Chicago) Steel Cornice Brake.



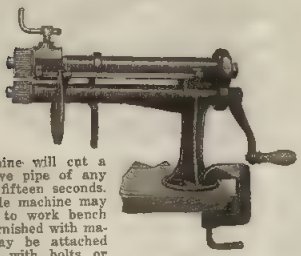
‡No. 4 O. K.—Bessemer steel, forming edge 8 feet 1 inch long. Will form ¼-inch edge on 26-gauge, ⅜-inch edge on 22-gauge, ¾ inch edge on 18-gauge, full length of sheet. Apron edge ½-inch from which ¼-inch may be removed. Angle bar bolted on apron for forming heavy material. Weight, 1,000 pounds. Price, each, including 5 formers $165 00

‡No. 3 O. K.—Bessemer steel, forming edge 8 feet 1 inch long. Will form ¾-inch edge on 16-gauge. Part of apron can be removed to form ¼-inch members on 24-gauge. Provided with angle bar to bolt on apron to form heavy material. Weight, 1,500 pounds. Price, each, including 5 formers 225.00

‡No. 2 O. K.—Bessemer steel, forming edge 10 feet 1 inch. Will form ¾-inch edge on 16-gauge, ¼-inch on 26-gauge, apron edge can be partly removed to form ¼-inch members. Angle bar provided to bolt on apron for forming heavy material. Weight, 2,400 pounds. Price with formers 350.00

METAL WORKERS' TOOLS

STOVE PIPE CUTTER AND CRIMPER



This machine will cut a piece of stove pipe of any diameter in fifteen seconds. Either style machine may be fastened to work bench by clamp furnished with machine or may be attached permanently with bolts or screws.

Cutters 90 to 100 carbon special tool steel; crimping rolls and shafts made of steel; body, special grey iron casting; 12 inch scale on machine.

The Kohler—Length 27 inches, height 15½ inches, finished in black and gold; shipping weight 45 pounds. Each $50.00

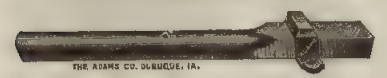
One in a wood box.

CRIMPER AND BEADER

Packham's.

Packham's crimping machines, for stove and conductor pipe, with stand. Each $18.00

STOVE PIPE MANDRELS



Adams—Used for forming and seaming. Length 36 inches; unpolished, width 4½ inches; with heavy saddle to attach to bench and pound upon; weight, each, 40 lbs., boxed. Each..... $7.50

One in a box.

SHEET METAL PUNCHES

Parker.

Combination Bench and Hand Punch.

This punch is designed for field and shop use for punching holes in sheet metal. It is the only hand punch with a front and side gauge combined. The gauge is used as a screw driver to change die and as a wrench for changing punch. The front pointer in connection with the side gauge enables you to locate the center of the punch without looking into the throat, doing away with center punching. Made from O.H. forged steel, heat treated. All working parts are hardened and tempered. Will punch a 17/64 inch hole in 16 gauge steel.

Parts of No. OX Punch.

Frame	Punch Holder Pin
Handle	Swinging Stop Pin
Punch Holder Head	Die
Punch Holder Nut	Punch
Side Links	Gauge
Swinging Stop	Gauge Screw
Side Link Pin	

No. OX—Complete with one punch and die. Depth of throat to center of punch 1½ inches. Length over all 8 inches; weight complete 2½ pounds. Each..... $8.00
Extra Punches up to 17-64 inches. Each..... $0.30
Extra Dies. Each ..... .40

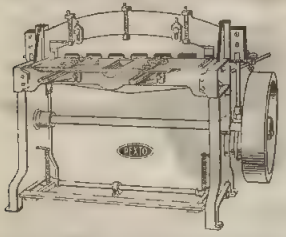
This punch is designed especially for work that has rolled or formed edges such as Automobile bodies, fenders, etc. The exposed punching parts enable the mechanic to see exactly where the punching is desired. Its construction is on the principle of a press, allowing any shape or size of punch and die to be used within its capacity. Used extensively for closing grommets, eyelets, stamping leather and letters, punching holes in sample cards, books, lighting fixture parts, etc. **The tool of 101 uses.** Made of drop forged steel, heat treated. All working parts properly hardened.

Parts of No. XX Punch.

Frame	Stripper Screw
Handle	Punch Holder Pin
Stripper	Link Pin
Side Links	Punch Holder
Gauge Complete	Punch
Gauge Screw	Die
Die Set Screw	Bench Stand
Punch Set Screw	

No. XX—Complete with one punch and die. Depth of throat to center of punch 3½ inches. Length over all 9 inches. Weight 4½ pounds. Each..... $15.00
Extra Punches up to 25-64 inches. Each. $0.70
Extra Dies. Each..... 1.20

POWER SQUARING SHEARS

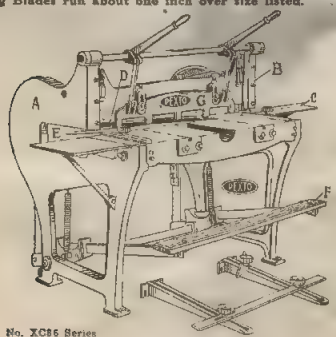


Capacity—No. 18 Gauge and Lighter.

These Shears embrace all modern features and will prove most serviceable for light work. We highly commend them for long wearing qualities. Substantially constructed for giving universal satisfaction up to their full rated capacity. They embody every modern improvement for a Shears of this type.

Nos.	‡210A	‡211A	‡212A
Length Cutting Blades, inches	30	36	42
Size Fly Wheel	24x4½	24x4½	24x4½
Weight Fly Wheel, lbs.	225	225	225
Speed Fly Wheel, R. P. M.	75	75	75
Horsepower required, maximum	1	1	1
Length Long Front Arms, in.	25¾	25¾	25¾
Length Rear Gauge Arms, inches	30	30	30
Width Bed Plates, inches	12½	12½	12½
Shipping Weight, approx. lbs.	1125	1300	1400
Each	$278.00	293.00	315.00
Nos.	‡213A	‡214A	‡215A
Length Cutting Blade, inches	62	62	72
Size Fly Wheel	24x4½	24x4½	24x4½
Weight Fly Wheel, lbs.	225	225	225
Speed Fly Wheel, R. P. M.	75	75	75
Horsepower required, maximum	1½	1½	2
Length Long Front Arms, in.	25¾	25¾	25¾
Length Rear Gauge Arms, inches	30	30	30
Width Bed Plates, inches	12½	12½	12½
Shipping Weight, approx. lbs.	1650	1740	2100
Each	$342.00	368.00	423.00

Note—Furnished complete with Hold-down Attachment, one pair Long Front Arms and complete Gauge Equipment. No. 215A is fitted with a Center Leg. Cutting Blades run about one inch over size listed.



No. XC36 Series

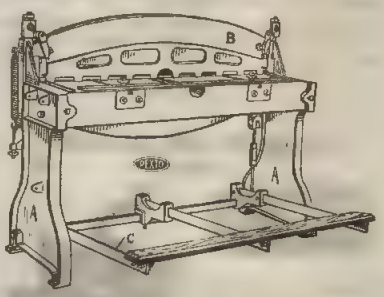
SQUARING SHEARS

These new patterns embody every improvement for a well-balanced, easy-operating shears. Housings (A) and (B) have a gap of 18 inches for permitting the cutting of sheets from ½ inch to the full depth of the gap in housings. The slitting gauge (C) facilitates the slitting of sheets of longer length than the cutting blades (D) and (E). The first cut made, the slitting gauge (C) secures proper alignment of the succesive cuts. The treadle (F) is steel and extensible. The lever hold-down (G) presses the sheet with security for insuring an accurate and clean cut. Used as a regular squaring shears, they will crosscut sheets at any point desired and of full width, according to the length of shears used.

Capacity—No. 16 Gauge Iron and Lighter.

Nos.	‡XC36	‡XC42	‡XC52
Length Cutting Blades, inches	36	42	52
Depth Gap in Housings, inches	18	18	18
Length Front Arms, inches	26½	26½	26½
Length Rear Gauge Arms, inches	24	24	24
Width Bed inches	14	14	14
Shipping weight, approx. lbs.	1500	1700	1900
Each	$250.00	285.00	355.00

Note—Furnished with hold-down attachment, side shelf, slitting gauge, one pair front arms and complete gauge equipment. Cutting blades run about one inch over size listed.



Capacity—No. 16 Gauge and Lighter.

No. 16 Gauge is as heavy as we recommend cutting with a Foot Powr Squaring Shears. Iron of Heavier Gauges should be cut with a Squaring Shears arranged for Power Drive. These heavy patterns can be depended upon to cut with a nicety up to their full rated capacity. Solid Cast Iron Legs (A) a well proportioned gate (B) that holds the Upper Cutting Blade, and a Steel Extension Treadle (C) are features which make them desirable for the shop where a heavy Foot Power Squaring Shears is used.

Nos.	‡0230B	‡0236B	‡0240B	‡0252B
Length cutting blade, inches	30	36	42	52
Length front arms, inches	25¾	25¾	25¾	25¾
Length rear gauge arms, inches	20	30	30	30
Width bed plate, inches	12½	12½	12½	12½
Shipping wt., approx. lbs.	790	920	980	1000
Price with Hold-down Attachment	$150.00	165.00	200.00	280.00

Note—Furnished with Hold-down Attachment, one pair long front arms, side tables and complete gauge equipment.

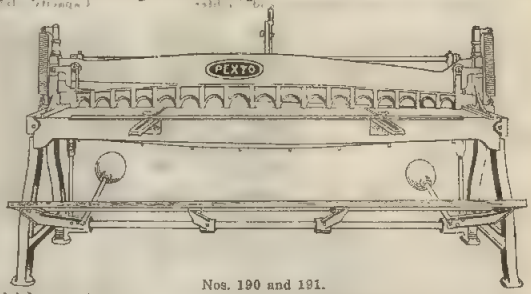
All items marked thus ‡ not carried in stock, but shipped direct from factory.

METAL WORKERS' TOOLS

SQUARING SHEARS

CORNICE MAKERS' SQUARING SHEARS

Capacity—No. 18 Gauge Iron and Lighter.



Nos. 190 and 191.

These Shears are designed for cornice work, but are equally valuable in other lines of manufacturing where first-class foot power shears of great capacity are required. They are built with unusual care, and designed to meet a demand for shears of accuracy and strength.

These machines are fitted with Arched Automatic Hold-down Attachment, which makes visible a line drawn on the metal for cutting accurately, fitted with gauges for squaring and cutting at angles and our new device for working automatically the back gauge. The lever which operates this automatic back gauge is operated from the front and center of the machine and position of back gauge is indicated on a graduated steel scale attached to the top of right-hand back arm. Same can be plainly seen at any point from the front of machine.

In oprating this lever from the front a slide indicator follows the graduation on the steel scale, and sheets from ¾ to 11 inches can be cut when the back gauge is set in the front pockets of the slide in the back arms.

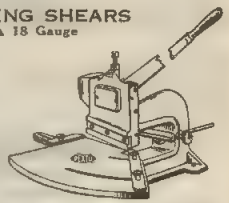
These machines are fitted with weight balanced foot treadles, insuring ease to the operator.

No.	‡191
Length of cutting blade, inches	91
Length of front arms, inches	23
Length of rear gauge arms, inches	25
Length of rear gauge, inches	24
Narrowest strip that can be cut	¾
Width of bed plate, inches	18
Shipping weight, approx. lbs.	2900
Each	$457.00

Note—Furnished complete with Hold-down Attachment, one pair Long Front Arms and complete Gauge Equipment.

SLITTING SHEARS

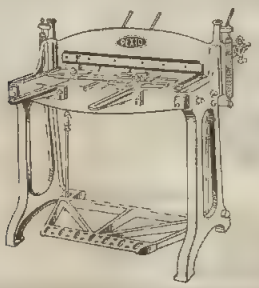
Capacity—No. 248A 18 Gauge Iron and Lighter



A splendid, practical Shears for range manufacturers and for general use in car shops, automobile plants and other shops where a variety of straight and irregular cutting is being done.

No.	‡248A
Length cutting blades, inches	6½
Depth of cutting head to gauge	9½
Depth cutting head to frame, inches	10
Size of table, inches	15x15½
Shipping weight, approx. lbs.	165
Each	$55.00
Price for extra cutter, per pair	8.00

SQUARING SHEARS



These new patterns are preferred over other Shears owing to their extra wide Bed Plate and are so proportioned that they will cut up to the full rated capacity very much easier than any other smaller shears of the same capacity. They are guaranteed to give very excellent service and Pexto high-grade quality materials combined with thorough workmanship make them the most desirable up-to-date, medium weight Shears that the market offers.

Capacity—No. 18 Gauge Iron and Lighter.

Nos.	‡122B	132B	‡137B	‡142B
Length cutting blades, inches	22	30	36	42
Length short front arms, in.	12½			
Length long front arms, inches.		19	25¼	25¼
Length rear gauge arms, inches.	24	30	30	30
Width bed plate, inches	12	14	14	14
Shipping wt., approx. lbs.	375	540	660	800
Price without side table, each	$72.00	95.00	125.00	161.00
Side Table—Each	3.50	3.50	3.50	3.50
Top Shelf—Each	2.00	2.00	2.00	2.00

Note—No. 122B furnished with Short Front Arms. Other numbers are furnished with Long Front Arms.

No. 137B and No. 142B have Hold-down Attachment. Finger gauge furnished with No. 122B and 132B. Complete gauge equipment furnished with all numbers.

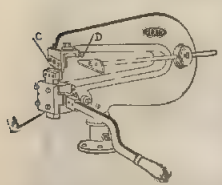
Side Tables and Wood Shelf will not be sent unless specified.

Items marked thus ‡ not carried in stock; but shipped direct from factory.

METAL WORKERS' TOOLS

SCROLL SHEARS

Capacity—No. 20 Gauge Iron and Lighter.



These Shears have created a big demand because of their service and satisfaction to those who use them. They will cut circles, ovals, ogees and all irregular shapes with the greatest ease. They are well adapted for cutting from the center of a sheet.

Mounted in a standard which screws to the bench and adjustable to any angle required, offers a convenient cutting feature.

The length of cut is regulated in the improved pattern by means of set screw (A) in bottom of lower blade holder cap. To shorten cut, turn the screw in. To lengthen the cut, turn the screw out.

Upper blade (C) can be adjusted for wear by means of two rear adjusting screws (D).

Gauge (E) is adjustable.

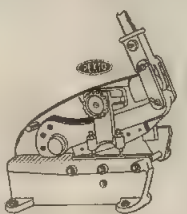
Nos.	‡268A	‡269A
Length cutting blade, inches	4	4¼
Depth cutting head to gauge, inches	16¾	17
Depth cutting head to frame, inches	12	18¼
Shipping weight, approx. lbs.	90	138
Each	$45.00	55.00
Price for extra cutters, per pair	10.00	10.00

SLITTING SHEARS

Capacity—No. 10 Gauge Iron and Lighter.

Will cut Bar Iron ¼x1½ inches.

No. R0296 will cut Rods up to ½ inch diameter.



These Shears are commended for the slitting of sheets, length or crosswise, with ease up to their full rated capacity. They are patterned so as to allow sheets to pass freely, and proportioned so as to obtain the greatest strength and durability. They are furnished with or without rod cutting attachment.

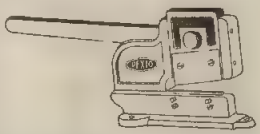
It must be remembered that the service a Lever Shears will give depends greatly on the care exercised in keeping up the adjustments provided for the blades and in keeping the blades sharp.

Nos.	Plain ‡0296	With Rod Cutter ‡R0296
Length cutting blades, inches	10	10
Length gauge rod, inches	14½	14½
Shipping weight, approx. lbs.	185	190
Each	$60.00	$70.00
Price for extra blades	12.00	12.00

No. 0296 is a plain slitting shears; No. R0296 is the same as No. 0296, but is fitted with a serviceable and very practical rod cutting attachment.

SLITTING SHEARS

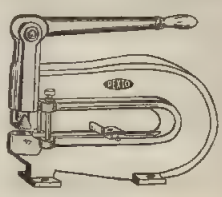
Capacity—Iron or Steel 3-32 inch and Lighter



This machine is made from same patterns as Pexto Auto-Brake Band Lining Cutter, but so constructed as to cut steel stock with the greatest ease. Its eccentric cutting device requires very little effort to cut sheet metal up to the full rated capacity It will prove a handy machine for the shop and on account of its light weight is easily carried to the job to be done outside.

No.	253
Length blades, inches	3½
Length bed, inches	10¼
Height bed, inches	6½
Length over all, including lever, inches	18
Weight, lbs.	17
Each	$12.00

PUNCHES



Pexto Samson punches are designed for great strength and rigity, making them exceptionally useful machines for general work. The deep throat in these machines will be found to a great advantage. The dies and punches as regularly made are intended for use on stock up to their full rated capacity, but where clean punching tin or light metal is desired, a closer-fitting die is preferable, which can be furnished when so ordered at the price of the regular dies. Fitted with adjustable gauge.

Nos.	‡675	‡676
Will punch with stay bolts in place iron, gauge	9	¼, 5-16, ⅜-in. hole in ⅜-inch iron.
Will punch with stay bolts removed iron, gauge	12	¼-inch hole in ¼-inch iron; 5-16 and ⅜-in. holes in 3-16 inch iron
Depth throat to frame, inches	15	15
Depth throat to gauge, inches	14½	14½
In place, width, inches	7	7
Will center sheets with stay bolts removed, width, inches	30	30
Shipping weight, approx. lbs.	140	250
Each	$40.00	$76.00

Extra Attachments.

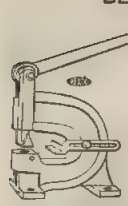
Extra punches, ⅛, 5-16, ⅜. Each.....$....
Extra punches, ⅛, 3-16, ¼. Each.....$....
Extra dies, ⅛, 3-16, ¼. Each.....$....
Extra dies, ⅛, 5-16, ⅜. Each.....$....
Extra strippers. Each.....$....

Note—No. 675 furnished with three dies and punches, viz.: ⅛, 3-16 and ¼. No. 676 furnished with three sets of dies and punches; viz.: ¼, 5-16 and ⅜.

Items marked thus ‡ not carried in stock; but shipped direct from factory.

METAL WORKERS' TOOLS

BENCH PUNCHES



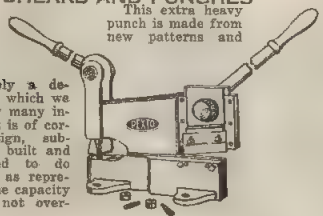
This machine is constructed to meet a wide field of usefulness and will prove an all-around punch for heavy work. The dies and punches as regularly made are intended for use on stock up to their full rated capacity, but where clean punching in tin or light metal is desired, a closer-fitting die is preferable, which can be furnished when so ordered at the price of the regular dies. It has a range for punching holes up to 1¼ inches in diameter. An extra stripper is necessary when punches from ⅛ to 1¼ inches are used. A stripper for 1¼-inch punch may be used with 1-inch punch, and a stripper for ¾-inch punch may be used with ½-inch punch. Fitted with a gauge that is adjustable.

No.	‡877
Will punch iron, inches	⅝
	Size Holes ¼, 5-16, ⅜-in
Depth of throat to frame, inches	6
Depth of throat to gauge, inches	5¼
Will center sheets, width, inches	12
Shipping weight, approx. lbs.	220
Each	$68 00

Extra Attachments.

Extra punches, ¼, 5-16, ⅜-inch. Each	$....
Extra dies, ¼, 5-16, ⅜-inch. Each	$....
Extra strippers. Each	$....

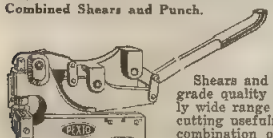
SHEARS AND PUNCHES



This extra heavy punch is made from new patterns and will supply a demand for which we have very many inquiries. It is of correct design, substantially built and guaranteed to do the work as represented; the capacity given is not overstated.

No.	‡880
Depth of punching gap, inches	6
Will center sheet, width, inches	10
Length cut, inches	6
Will cut iron, lengthwise or crosswise, inches	8
	½-inch square
Will cut iron, lengthwise or crosswise, inches	8
Will cut bar iron inches	¼x1½,⅜x⅜ or
Shipping weight, approx. lbs	400
Each	$119.00

Combined Shears and Punch.



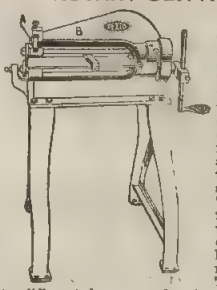
Shears and punches of high-grade quality with an extremely wide range of punching and cutting usefulness possessing a combination of individual features that make them highly adaptable for general use

No.	‡879
Will punch iron, inches	⅝
Depth punching gap, inches	2¾
Will center sheets, width, inches	5½
Length cut, inches	4¾
Will cut iron, thick, inches	⅝
Will cut narrow bars, inches	⅛ and ¼
Shipping weight, approx. lbs	120
Each	$45 00

Extra Attachments

Extra punches. Each	$....
Extra dies. Each	$....

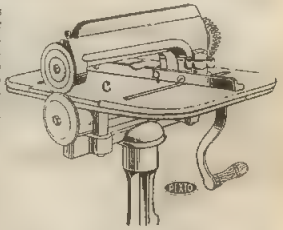
ROTARY SLITTING SHEARS



These shears will prove a time saver in any shop. They permit the most rapid means for slitting iron used in cornice, furnace, blow-pipe, ventilation work, etc. They may be utilized for conveniently cutting large irregular curves and circles when following a scribed line in a fraction of the time it takes to do the work with snips or bench shears. The cutters are made from a special high-grade tool steel properly hardened and tempered nad have two cutting edges, making them reversible. The crank is adjustable to different leverages, bearings (A) are adjustable to take up wear.

No.	‡285A
Diameter cutters, inches	$ 1-16
Depth cutting head to gauge, inches	18
Depth cutting head to frame, inches	19
Size table, inches	20x8
Shipping weight, approx. lbs.	225
Each	$75.00
Price extra cutters, per pair	18 00

Capacity—No. 20 Gauge Iron and Lighter.



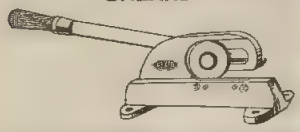
These shears are intended for bench use and are well suited for slitting brass, copper silver, aluminum and sheet iron. The machine is compact, nicely proportioned and will give the best of good service. Adjustments for taking up wear of cutters are provided.

Nos.	Hand ‡250A	Power ‡0250A
Diameter cutters, inches	3	3
Depth cutting head to gauge, inches	3	3
Depth cutting head to frame, inches	10¼	10¼
Size pulley		6x3
Speed pulley, R. P. M.		80
Narrowest strip that can be cut, inches	¼	¼
Shipping weight, approx. lbs.	100	125
Each	$40.00	60.00
Price extra cutters, per pair	12.00	12.00

Items marked thus ‡ not carried in stock; but shipped direct from factory.

2036 METAL WORKERS' TOOLS

CONTINUOUS ROLLING CUTTER SHEARS



These shears are opreated by a pinion lever engaging in a rack and cutting with the forward roll of the cutting disc. The advantage of this construction is that the power travels with the cutter. With ordinary shears, as the cutting edge recedes from the fulcrum the resistance increases, not so with these shears, the resistance and power being the same all along the cut.

The motion of the circular cutting disc is about one-third of its circumference. The cutting disc is provided with three slots, which correspond with three pins on the cutting disc bolt; this enables the operator to change the cutting disc to six different positions—three on each side—the disc being reversible.

The lower or stationary cutting blade has two cutting edges. The ends of the cutter are beveled to match the heads of th bolts which draw the cutter blade in recess of shear stock. Two set screws, which press this cutter blade in opposite directions, are the means to adjust the lower cutter perfectly to the upper cutter disc

The angle of contact of the two cutters remains the same during action, therefore this shears is well adapted to cut pieces out of a sheet of metal without injuring the same by cross-cut marks, which is very difficult with other shears.

Nos.	‡294	‡295
Capacity gauge iron and lighter	20	16
Diameter upper cutter, inches	1¾	2¾
Length lower blade, inches	2¼	3⅝
Length bed, inches	7	11
Height bed, inches	4	6
Length over all, including lever, inches	12	20
Shipping weight, approx. lbs.	4	11
Each	$9.00	12.00

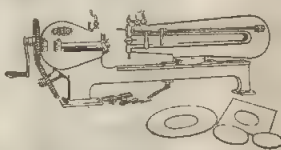
RING AND CIRCULAR SHEARS

Capacity—No. 18 Gauge Iron and Lighter.

An exceedingly well-constructed ring and circular shears, made from improved patterns, very desirable for general ring and circle cutting. A scale, graduated in inches and fractions of inches, highly polished, is fixed to the bed plate (A) to provide for easy and quick setting of tail piece (B), for the size circle or ring to be cut. Designed with angular cutters, rings can be cut with smooth edges from a circle without cutting through the outer edge. Mounted on heavy cast iron floor legs. The clamping discs (C) are rubber covered, to prevent any possible slipping of blanks. The tail piece (B) is quickly set in position by a turn of the crank (D).

No.	‡297
Diameter cutters, inches	1⅝
Diameter clamping discs, inches	2¾
Depth cutting head to gauge, inches	12¾
Depth cutting head to frame, inches	12⅞
Depth circle arm, inches	30
Size pulleys, inches	10x5
Speed pulley, R. P. M.	60
Will circle from square blanks, inches	4 to 42
Will cut rings as small as (inside diamter), in.	4
Will cut rings as large (outside diameter), in.	42
Shipping weight, approx. lbs.	600
Each	$200.00
Price extra cutters, per pair	8.00

Note—Furnished complete with tight and loose pulleys, belt shifter and hand crank.



These improved patterns make up for a very useful and efficient bench ring and circular shears, intended for cutting circles or internal rings and irregular curves. In circular cutting the blanks are clamped between rubber covered discs (A) by means of a quick-acting eccentric lever device (B), adjustable for exerting extreme uniform pressure to prevent the work from slipping and insuring more accurate cutting. This method permits the clamping and removing of blanks with greater rapidity than with the old crang screw method. The bed (C) on which the tail piece (D) slides, is graduated in inches and fractions of inches for quick setting of the tail piece (D) for the size circle to be cut. The angular position of cutter (E) allows for a clean cutting on the inside as on the outside of circle.

Capacity—No. 20 Gauge Iron and Lighter.

Nos.	‡298	‡299
Diameter cutters, inches	1⅝	1⅝
Diameter clamping discs, inches	2¼	2¼
Depth cutting head to gauge, in.	9½	9½
Depth cutting head to frame, in.	10	10
Depth circle arm, inches	16¼	30½
Will circle from square blanks, inches	3¼ to 22	3¼ to 42½
Will cut rings small as (inside diameter), inches	3¼	3¼
Will cut rings large as (outside diameter), inches	22	38
Shipping weight, approx. lbs.	195	290
Each	$70.00	90.00
Price extra cutters, per pair	8.00	8.00

Note—Friction clutch attachment for power, can be fitted at an extra cost when so ordered. Not made for tight and loose pulleys.

Items marked thus ‡ not carried in stock; but shipped direct from factory.

BLOW TORCHES

CLAYTON & LAMBERT

No. 144 Torch for Gasoline.

Is made to meet the demand for a low priced torch. The burner is made of good bronze metal and it produces a hot steady blue flame. Tank is made of seamless drawn brass with funnel shaped bottom. Fitted with automatic brass pump. Cast bronze hook for holding soldering copper is removable.

No. 144—Capacity one quart. Weight, 4 lbs. Each.....$10.00

‡**No. 146**—Is exactly the same in construction as No. 144, only it is one size smaller. Capacity one pint. Weight, 3 lbs. Each $9.00

No. 130 Torch for Gasoline.

A medium priced torch of good value. The burner with under generator vein and tapered burner tube is made of good bronze metal. It produces a strong blue flame. Cast bronze hook is removable. Tank made of heavy gauge seamless drawn brass and has concaved brass bottom. Fitted with automatic brass pump.

No. 130—Capacity, one quart; weight, 4¼ lbs. Each....$12.00

No. 32 Torch for Gasoline.

Fitted with back-flow burner, made of bronze metal which superheats the gas and produces a perfect blue flame of intense heat in wind or extreme cold. Burner has cast bronze hook and support for holding copper. Hook is removable. Tank is made of heavy gauge seamless drawn brass, reinforced and has concaved brass bottom. Fitted with automatic brass pump.

No. 32—Capacity, one quart; weight, 4½ lbs. Each....$16.00

‡**No. 38**—Is exactly the same in construction as No. 32, only it is one size smaller. Capacity, one pint. Weight, 3 lbs. Each.....$14.40

No. 208 Torch for Gasoline or Kerosene.

Most powerful quart torch ever produced. Works in wind and zero weather. Improved Double Needle Burner, with super-heating chamber, made of bronze metal. Burns either gasoline or kerosene by changing jet block in the burner. Both needles are blunt, which makes it impossible to injure orifice. The upper needle has a wire tip which cleans the orifice. The lower needle is the shut-off which regulates and controls the flame. Tank is made of heavy gauge seamless drawn brass. Fitted with automatic brass pump. Cast bronze hook is removable.

No. 208—Capacity, one quart; weight, 5⅛ pounds. Each.....$17.00

‡**No. 210**—Is exactly the same in construction as No. 208, only it is one size smaller. Capacity, one pint. Weight, 4 lbs. Each.....$15.40

No. 206 Torch for Gasoline or Kerosene.

This two-quart torch is designed for extra heavy work. Double Needle Burner has maximum generating power and burns gasoline or kerosene by changing the jet block in the burner. The upper needle cleans the gas orifice. Lower needle regulates the flame. Both needles are blunt. Cast bronze hook is removable. Tank is made of heavy gauge seamless drawn brass and fitted with powerful automatic brass pump. Filler plug has an air releasing valve so that the air pressure can be removed to extinguish the flame.

No. 206—Capacity, two quarts. Weight, 7¾ pounds. Each.....$32.00

TURNER MASTER LINE

Turner.

A combination gasoline and kerosene blow torch. No changing of parts necessary. Perfect in design, material and construction.

No. 43—Polished brass tank; capacity, one quart; weight, each, 4 lbs. Each.....$12.00
One in a box.

Items marked thus ‡ not carried in stock, but shipped direct from factory.

FIRE POTS AND FURNACES

GASOLINE FIRE POTS

Clayton & Lambert.

No. 22 Coil Fire Pot for Gasoline

The tank is made of heavy gauge seamless drawn steel, tinned inside and out, making it absolutely rust proof and fitted with Cushion Protection Band at base of tank. Fitted with brass cane, elbows and tees, brass pump, large funnel and filler plug with dust-proof cap, also with latest improved three-piece coil cup and top plate, which enables operator to remove top section by unscrewing three large brass nuts thus exposing burner and coil. No coil cup lugs or small nuts to burn off.

No. 22—Capacity, one gallon. Weight, 12½ lbs. Each..... $16 00

No 12—Same design and construction as No. 22, except that it is fitted with valve and pulb instead of pump. Capacity, one gallon. Weight, 12½ lbs. Each $14.00

No. 1 Fire Pot for Gasoline

A general utility fire pot. Tank is made of heavy gauge seamless drawn steel, tinned inside and out, making it absolutely rust proof. Fitted with Cushion Protection Band preventing injury to base of tank. Has large funnel and filler plug with dust proof cap. Equipped with double needle burner on a swivel which permits moving the flame up or down. Pair of 12-pound coppers can be heated and a pot of metal melted at same time. Top section can be removed

No. 1—Capacity, one gallon. Weight, 14 lbs. Each $27.20

No. 71 Fire Pot for Gasoline.

Is smokeless, odorless and noiseless. Improved double needle burner super-heats the gas. It has double heating surfaces, the gas burning from each side of the burner tubes to the center. A sub-flame for the generator allows the heating flames to be turned low if desired. The tank is made of heavy gauge seamless drawn steel, tinned inside and out, absolutely rust proof. Protection band prevents injury to base of tank. It has large funnel and filler plug with dust-proof cap. Heats 12-pound coppers.

No. 71—Capacity, one gallon. Wt., 16½ lbs. Each $27 20

Diener.

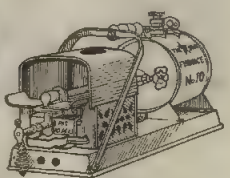
This furnace is especially constructed for sheet metal worker's use. Is equipped with special cast horse-shoe burner, burning from each side toward the center, giving the benefit of all of a torrid flame in heating contact with one or two coppers. While a large volume of blue flame can be produced for heating large coppers or melting pot, this furnace having an independent flame for generator, will burn a perfectly blue flame and keep generation for any length of time with a very low flame if desired. Has a brass set air pump, a metal turret hood with reversible swing door to confine the flame and circular opening for melting pot, with cover. Is noiseless in operation, convenient, durable and economical. Will heat 3 to 12-pound coppers, indoors or on roof. Made with a round tank, which is shaped from drawn steel and tinned

No. 15—Capacity of tank, one gallon; consumption of gasoline per hour, full blast ⅜ pint, height, 12 inches; weight, 14 pounds, boxed, 22½ pounds. Each $16.00

One in a box.

TINNERS AND ROOFERS FURNACES

Star.

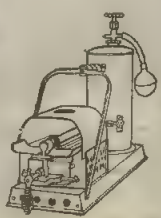


Designed specially for tinners who desire a light, compact and powerful furnace. As it is only 10 inches high and 20½ inches long, it can be easily carried on the wagon, and gives no trouble on the roof. Soldering coppers are only 4 inches above the bench and are convenient to use. Equipped with self balancing handle, non-sliding hood, new leakless brass air pump, heavy reservoir, safety globe valve. A practical furnace in every way and will produce the best work within its scope

No. 10S—Size, 10 inches, 7 inches wide, 20 inches long; capacity, of reservoir, 3 quarts. Weight, each, crated, 20 lbs Each $19 00

One in a crate

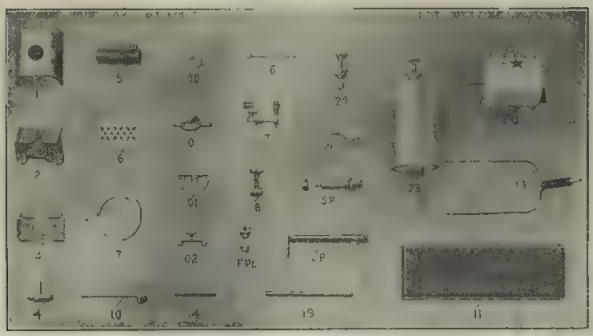
Gem.



No. 3—Gem gasoline fire pots, galvanized reservoir, with bulb. Each..$19.00

No. 3C—Gem gasoline fire pots, copper reservoir, with bulb. Each..... $1.00

REPAIR PARTS



Repairs for Gem Fire Pots.

‡**No. 1—Hood,** part that covers the soldering coppers. Weight, 2 pounds. Each $1.20

‡**No. 2—Front resting plate,** part that soldering coppers rest on. Weight, 2 pounds. Each ..... .90

‡**No. 3—Back resting plate,** part that points of soldering coppers rest on. Weight, 1 pound. Each ..... .80

‡**No. 4—Drip cup,** part that holds the oil for heating generator valve in starting. Weight, 1 lb. Each. .40

No. 5—Cylinder or slotted burner, cylindrical slotted part that supplies the flame, 5 5-16 inches long. Weight, 2 pounds. Each 1.00

‡**No. 6—Side pieces,** part supporting furnace and protecting flame. Weight, 1 pounds. Each ..... .30

‡**No. 7—Ring,** iron part around bottom of reservoir, attached to base. Weight, 1 pound. Each ..... .40

‡**No. 10—Slide rod,** part that drip cup slides on. Weight, 4 ounces. Each ..... .30

‡**No. 11—Steel base,** part that furnace and reservoir to rest on. Weight, 3 pounds. Each 1.10

‡**No. 13—Handle,** malleable iron, to support reservoir and carry furnace. Weight, 1 pound. Each 1.00

No. 14—Mixing tube, conveys gas from needle point to mixing chamber. Weight, 2 ounces. Each ..... .20

‡**No. 16—Bolts,** for bolting front and back resting plates together, length 6¼ inches. Weight, 4 ounces. Two for ..... .20

No. 17—Generator valve, valve that regulates and generates the gas. Weight, 1 pound. Each 1.60

No. 18—Oil faucet, valve that goes between furnace and reservoir. Weight, 1 pound. Each 1.00

No. 19—Generating pipe, pipe that fits in furnace over sloted burner, drawn steel tubing. Weight, 1 pound. Each ..... .90

No. 20—Air faucet, brass casting that screws on top of reservoir. Weight, 1 pound. Each 1.40

‡**No. 21—Patent rubber bulb** and tube, part fits on tube of air faucet for supplying pressure. Weight, 4 ounces. Each ..... .80

No. 22—Rubber valve, part that works in metal coupling of bulb. Weight, 1 ounce. Two for ..... .05

‡**No. 23—Galvanized iron reservoir,** tank that holds the gasoline. These prices include air faucet and pipes, excluding rubber bulb, ready to fit oil faucet. Weight, 5 pounds. Each 5.75

‡**No. 23P** Galvanized steel reservoir for No. 3 Gem, including leakless pump and filler plug. Weight, 6 pounds. Each 6.25

‡**No. 24—Copper reservoir,** including air valve. Weight, 6 pounds. Each 6.50

‡**No. 24P—Copper reservoir** for No. 3 Gem, including pump and filler plug. Weight, 6 pounds. Each 7.25

‡**F. P1—Filler plug and collar** for top of reservoir. Weight, 1 pound. Each ..... .70

‡**S. P.—Small pump and collar,** goes into top of reservoir. Weight, 1 pound. Each 2.00

‡**L. P.—Large pump and bracket,** goes outside of No. 11 Gem. Weight, 1 pound. Each 1.40

‡**Plumbers' lead pot**—Weight, 6 pounds. Each ... 1.00

‡**No. 01—Supporting bottom,** part supporting drip cup. Weight, 1 pound. Each ..... .40

‡**No. 00—Chimney,** screen protecting drip cup. Weight, each, 2 ounces. Each ..... .10

‡**No. 0—Drip cup,** part that holds gasoline. Weight, 1 pound. Each ..... .70

‡**No. 02—Bracket,** part supporting bottom is bolted to. Weight, 1 pound. Each 40

Items marked thus ‡ not carried in stock, but shipped direct from factory.

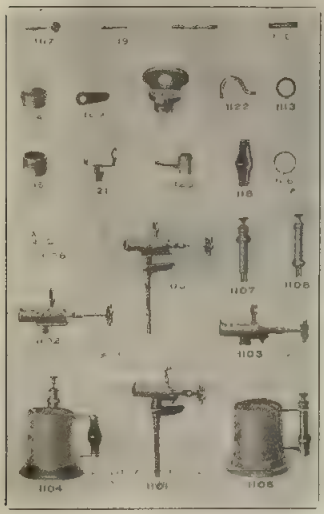
2052

BLOW TORCHES

‡REPAIR PARTS

Clayton & Lambert.

Repair Parts for Nos. 32, 130, 144 and 148.



No. 1100—Burner Complete for No. 32 Torch.
No. 1101—Burner Complete for No. 148 Torch.
No. 1102—Burner Body and Needle for No. 32 Torch.
No. 1103—Burner Body and Needle for No. 144 Torch
No. 1104—Tank Complete with Cushion Band
No. 1105—Tank Only with Brass Flange

Note—In ordering repair parts, state catalog number of Torch shown on handle bracket or tank.

Single Needle.

QUART SIZE.

DESCRIPTION	Nos.	32	130	144	148
‡Burner Complete		$5.60	$5.00	$5.00	$5.00
†Burner Body Complete		3.60	3.60	3.60	3.60
†Tank Complete		9.00	9.00	9.00	9.00
‡Tank Only		7.00	6.40	6.40	6.40
‡Sharp Point Needle	1106	1.30	1.30	1.30	1.30
‡Pump Complete		2.60	2.60	2.60	2.60
‡Drip Cup	1109	1.30	1.30	1.30	1.30
‡Burner Nipple	1110	.30	.30	.30	.30
‡Dip Tube	1111	.70	.70	.70	.70
‡Filler Plug	1112	.80	.80	.80	.80
Filler Plug Washer	1113	.10	.10	.10	.10
‡Filler Collar	1114	.30	.30	.30	.30
‡Pump Collar	1115	.80	.80	.80	.80
‡Pump Nipple Washer	1116	.10	.10	.10	.10
‡Ebonite Handle and Screws	1118	.50	.50	.50	.50
‡Upper Bracket		.50	.50	.50	.50
‡Lower Bracket		.50	.50	.50	.50
‡Soldering Iron Attachment				.80	.80
‡Stuffing Box for Burner		.25	.25	.25	.25
‡Cleanout Plug for Burner		.10	.10	.10	.10

Repair Parts for Nos. 206, 208 210 and 48.

Note—In ordering repair parts, state the catalog number of Torch shown on the tank or handle bracket.

Double Needle.

DESCRIPTION	Nos.	206	208
‡Burner Complete	1050	$11.00	$7.50
†Back Burner, Complete J	1054	3.10	2.40
‡Burner Body K	1056	3.50	3.50
‡Lower Needle F. D		1.00	1.00
‡Upper Needle E. P. C		1.55	1.55
‡Stuffing Box (Lower) D		.25	.25
‡Stuffing Box and Stop Nut Upper P. C		.50	.50
‡Jet Block for Gasoline	1064	.25	.25
‡Jet Block for Kerosene	1065	.25	.25
‡Wind Shield A	1056	.40	.40
‡Drip Cup and Screw K	1067	1.30	1.30
‡Dip Tube N	1068	.70	.70
‡Cleanout Screw and Nut B		.20	.15
‡Vein Tube I		.15	.15
‡Nipple M	1071	1.30	.80
‡Pump Complete	1078	4.80	2.60
‡Filler Plug	1073		.80
‡Filler Cap	1080	2.00	
‡Filler Plug Washer	1074	.10	.10
‡Pump Collar	1075	.50	.50
‡Filler Collar	1076	.50	.50
‡Pump Nipple Washer		.10	.10
‡Tank Complete	1078	22.60	9.60

Note—No. 208 Burner is ¼-inch I. P. S. and will fit any of our quart size torches. No. 206 Burner is ⅛-inch, 24 threads. Burner hooks are removable.

Items marked thus ‡ not carried in stock, but shipped direct from factory.

FIRE POTS
‡REPAIR PARTS

No. 1 Style.
Double Needle.

The above parts are not interchangeable with No. 71 Old Style Fire Pot.

Pumps Complete and Extra Parts.

Nos. 1200-1201 For Torches Nos. 82-35-130-144-146-208 and 210.
Nos. 1202-1203 For Fire Pots Nos. 1-71 and 22.
Nos. 1204-1205—For Torches Nos. 48 and 148.

‡Nos. 1200 to 1205 Inclusive.

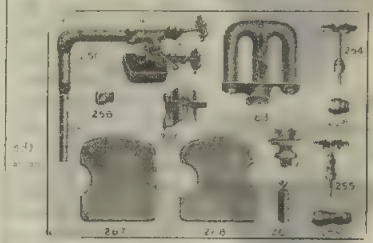
‡Pump Complete	$2 60
‡Pump Knob A	.20
‡Pump Plunger Complete	1 00
‡Pump Bottom including Check Valve	1 00
‡Pump Cap C	.20
‡Barrel D with Nipple F and Bottom	1 20
‡Round Washer, Metal G	.10
‡Flat Leather Washer H	.10
‡Slide Complete I	.50
‡Hexagon Nut Large J	.10
‡Cup Leather Washer K	.20
‡Plunger Nut L	.10
‡Hexagon Nipple E	.50
‡Leather Washer for Nipple	.10
‡Check Valve Rods (Two) M	.10
‡Check Valve Cork Seat N	.10
‡Check Valve Top Plate and Cork Holder O	.20
‡Check Valve Springs (Two) P	.10
‡Check Valve End Plate Q	.20
‡Check Valve Hexagon Nuts (Two) R	.10
‡Pump Collar	.30

New Style Pumps—Nos. 1200, 1202 and 1204 have the nipples threaded on the INSIDE to fit the collars on tank or the lower pump bracket threaded on the OUTSIDE. Size 1 inch, 16 threads.

Old Style Pumps—Nos 1201, 1203 and 1205, have the nipples threaded on the OUTSIDE to fit the collar on tank or the lower pump bracket threaded on the INSIDE Size ⅞-inch, 24 threads.

Note—In ordering pumps and extra parts, state if old or new style and the catalog number of Torch or Fire Pot shown on tank or handle bracket.

No. 71 New Style.
Double Needle—1923 Model.



Note—State whether of New or Old Style

Part No.	DESCRIPTION	List Price
‡250	Generator Complete	$6 80
‡251	Back Burner Complete—A, D, E	8.10
‡253	Generator Pipe and Elbow (with wires) M, N	.80
‡254	Long Needle and Stuffing Box—D, L	1.00
‡255	Short Needle, S, B, and Stop Nut—E, K	1.55
‡256	Jet Block for Gasoline	.25
‡258	Stuffing Box for Long Needle, L	.25
‡259	Stuffing Box with Stop Nut—K	.20
‡260	Drip Cup—R	1.30
‡261	Nipple—O	1.20
‡262	Dip Tube—P	.70
‡263	Burner Plate Tubes and Plugs	4.40
‡264	Perforated Tubes (each)	.20
‡265	Clip with Screw and Nut	.25
‡266	Flame Plate	.45
‡267	Heat Shield for No. 71 Fire Pot	1.50
‡268	Heat Shield for No. 72 Fire Pot. Obsolete.	1.80
‡269	Studs with Screws (four) each	.60
‡271	Filler Plug with D. P. Cap	1.50
‡275	Tank Only. One Gallon Capacity	10.00

METAL POTS

Our Metal Pots are of the deep pattern and hold sufficient metal or solder for all practical purposes, and will fit any make of Fire Pot or Furnace. The 6-inch pot is the right size to fit the No. 1 large shield of Coil Fire Pots. The 8-inch pot fits only the extra large shield used with our No. 223 Kerosene Fire Pot.

‡Size 5 inch—Each	$1.20
‡Size 6 inch—Each	1.70
‡Size 8 inch—Each	4.40

Items marked thus ‡ not carried in stock, but shipped direct from factory.

1847 ROGERS BROS.

SILVERPLATE

AMBASSADOR PATTERN

Correct in outline and original in decoration, Ambassador pattern retains the durable qualities characteristic of all 1847 Rogers Bros. ware.

All fancy pieces are supplied, singly or in sets, in white kid-finish gift boxes, blue velvet lined, without extra charge

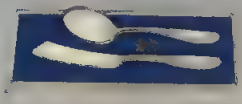
STAPLES

		Per Dozen
No. 8401.	Tea Spoons	$8 80
8402.	Dessert or Oval Soup Spoons	16.40
8403.	Table or Serving Spoons	17 00
8404.	Soup Spoons, Round Bowl	17 00
8405.	Bouillon Spoons (velvet lined box)	16.00

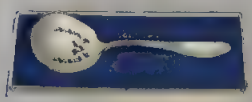
FORKS

8477.	Dinner, Flat Handle	1. 00
8476.	Dessert or Luncheon, Flat Handle	10.40
8447S.	Dinner, Solid Handle	11 60
8447D.	Dessert or Luncheon, Solid Handle	11 20

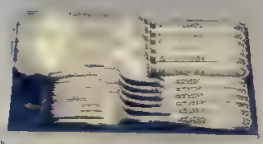
No. 84017 Olive Spoon .. Each $2.00



No. 84301 Butter Knife and Sugar Shell Per Set $3.24
84201 Butter Knife ..... Each 1.76
84017 Sugar Shell..... Each 1.68



No. 84252 Tomato or Cucumber Server Each $3.76

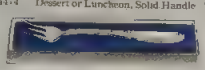


No. 84481s Six each Solid Handle Dinner Knives, Stainless Blades and Forks Per Set $14.10
84481 Above, Plated Blades Per Set 11.60
84482 Six each Solid Handle Dessert Knives, Stainless Blades and Forks Per Set 11 20
84483s Six each Solid Handle Dinner Knives, Stainless Blades, and Flat Forks Per Set 17.10
84463 Above, Plated Blades. .....Per Set 14.30

TEA SPOON
Actual Size

KNIVES

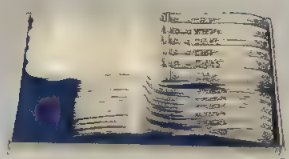
		Per Dozen
No. 84401s.	Dinner, Hollow Handle, Stainless Blades	$8.00
84401	Dinner, Hollow Handle	7.60
84403.	Breakfast, Hollow Handle	7.60
84404.	Dessert or Luncheon, Hollow Handle	7.20
8440[illegible]s	Fruit, Hollow Handle, Stainless Blades, 5 & 6	7.60
8440[illegible].	Dinner, Modeled Handle	7.20
8445[illegible]s.	Fruit, Modeled Handle, Stainless Blades, 5 & 6	7.1
8447[illegible]	Dinner, Solid Handle	11 60
8441-4	Dessert or Luncheon, Solid Handle	11. 20



No. 84108 Pickle Fork, short ..... Each $1.66

No. 84003 Berry Spoon, large Each $3.60
84004 Berry Spoon, small Each 3.10

No. 84103 Cold Meat Fork, large Each $2.34
84104 Cold Meat Fork, small Each 1.90



No. 84481s Six each H. H. Dinner Knives, Stainless, and Flat Forks Per Set $23.50
84421 Above Plated Blades Per Set 22.30
84424s Six each H. H. Breakfast Knives, Stainless, and Dessert Forks Per Set 23.10
84424 Above, Plated Blades Per Set 21.90
84422s Six each H. H. Dessert Knives, Stainless, and Flat Dessert Forks Per Set 22.90
84422 Above, Plated Blades Per Set 21 70

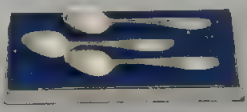
All 1847 ROGERS BROS. Silverplate is wrapped in anti-tarnish parchment

1847 ROGERS BROS.
SILVERPLATE

AMBASSADOR PATTERN

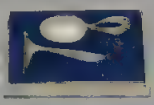
All fancy pieces are supplied, singly or in sets, in white kid-finish gift boxes, blue velvet-lined, without extra charge.

No. 84204 Jelly Knife . . Each $2.00

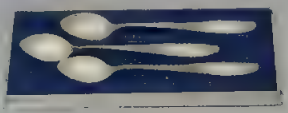


No. 84014 Orange or Grape Fruit Spoons Set of Six $6.00

No. 84304 Baby Spoon and Fork, short handle . . Per Set $2.40
84062 Baby Spoon, short handle . . . . . Each 1.20
84101 Baby Fork, short handle . . . . . Each 1.20



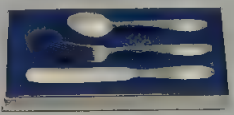
No. 84303 Baby Spoon, bent handle, and Food Pusher Per Set $2.40
84091 Baby Spoon, bent handle . . . . . Each 1.20
84276 Food Pusher . . . . . Each 1.20



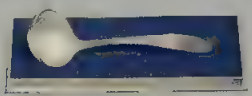
No. 84012 Iced Tea Spoons . . Set of Six $7.00

No. 84202 Butter Spreaders. . . . Set of Six $7.20

No. 84253 Dessert Server . . Each $5.00



No. 84282 Child's Set, 3 pieces. (Illustrated) . . . . . Per Set $3.60
84333 Child's Set, 3 pieces Hollow Handle Knife Per Set 4.40
84356 Child's Set, 3 pieces, Solid Handle Knife.. Per Set 3.24



No. 84227 Gravy Ladle. (Illustrated). . . . . Each $2.70
84226 Cream Ladle . . . . . Each 2.00

Hollow Handle Carving Sets with Stainless Blades
No. 84437s Game Set, 2 pieces. (Illustrated) . Per Set $15.60
84436s Meat Set, 2 pieces. Per Set 20.00
84438s Bird or Steak Set, 2 pieces Per Set 14.00
84439s Bird or Steak Set, 2 pieces Per Set 10.00

No. 84111 Salad Forks, Individual . . Set of Six $8.80

No. 84254 Pie or Ice Cream Server, Hollow Handle Each $6.74

All 1847 ROGERS BROS. Silverplate is wrapped in anti-tarnish parchment

No 1083-4 Printed in U. S. A.

1847 ROGERS BROS.

SILVERPLATE

ANNIVERSARY PATTERN

The simple yet rich Colonial design suggests cordial hospitality and the atmosphere of family reunion and anniversary celebration.

All fancy pieces are supplied, singly or in sets, in white kid-finish gift boxes, blue velvet-lined, without extra charge

STAPLES

		Per Dozen
No. 8501.	Tea Spoons	$8.50
8502.	Dessert or Oval Soup Spoons	16.40
8503.	Table or Serving Spoons	17 00
8504.	Soup Spoons, Round Bowl	17 00
8509S.	Bouillon Spoons, in velvet-lined box	16.00

FORKS

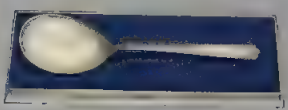
No. 8505.	Dinner, Flat Handle	17 00
8506.	Dessert or Luncheon, Flat Handle	16 40
8547S.	Dinner, Solid Handle	14 60
8547S.	Dessert or Luncheon, Solid Handle	11.20

KNIVES

		Per Dozen
No. 8540Ss.	Dinner, Hollow Handle, Stainless French Blades	$30.00
8540I.	Dinner, Hollow Handle	27.50
8540I.	Dessert or Luncheon, Hollow Handle	22 00
8541S.	Breakfast, Hollow Handle	2 00
8540Ss.	Fruit, Hollow Handle, Stainless Blades, S. & S.	2. 40
8547Ss.	Dinner, Solid Handle, Stainless French Blades	27.60
8547I.	Dinner, Solid Handle	1 20
8541I.	Dessert or Luncheon, Solid Handle	11 60
8547Ss.	Fruit, Solid Handle, Stainless Blades	11 20

No. 85017 Sugar Shell . . . . . Each $1.55
85301 Butter Knife and Sugar Shell . . Per Set 3.34

No. 85201 Butter Knife . . Each $1.78

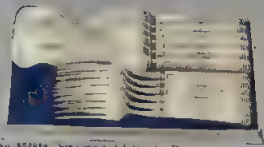


No. 85003 Berry Spoon, large . . . Each $3.50
85004 Berry Spoon, small . . . Each 3.10

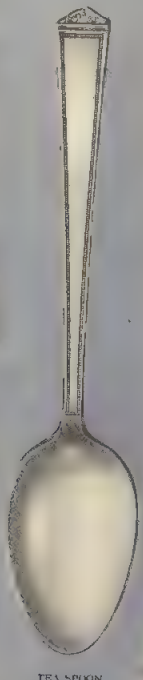
No. 85103 Cold Meat Fork, large . . . . . Each $2.34
No. 85104 Cold Meat Fork, small . . . . . Each 1.90

No. 85204 Jelly Knife . . . . . Each $2.00

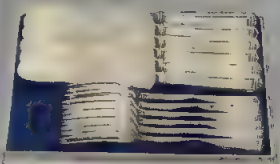
No. 85012 Iced Tea Spoons . . . . . Set of Six $7 00



No. 8548Is Six each Solid Handle Dinner Knives, Stainless French Blades, and Forks . . . . . Per Set $14.40
8548I Above, Plated Blades . . . . . Per Set 11.80
8548Is Six each Solid Handle Dessert Knives and Forks . . . . . Per Set 11.20
8548Is Six each Solid Handle Dinner Knives, Stainless French Blades, and Flat Forks . . . . . Per Set 12.70
8548S Above, Plated Blades . . . . . Per Set 14.30



TEA SPOON
Actual Size



No. 85421s Six each H. H. Dinner Knives, Stainless, and Flat Forks . . . Per Set $23.50
85421 Above, Plated Blades . . . . . Per Set 22.30
85426s Six each H. H. Breakfast Knives, Stainless, and Flat Dessert Forks Per Set 23 10
85424 Above, Plated Blades . . . . . Per Set 21.90
85422s Six each Dessert Knives, Stainless, and Flat Forks . . . . . Per Set 23.90
85422 Above, Plated Blades . . . . . Per Set 21.70

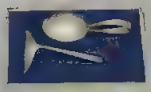
All 1847 ROGERS BROS. Silverplate is wrapped in anti-tarnish parchment.

1847 ROGERS BROS.
SILVERPLATE

ANNIVERSARY PATTERN

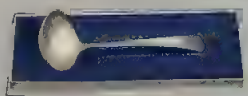
All fancy pieces are supplied, singly or in sets, in white kid-finish gift boxes, blue velvet-lined, without extra charge.

No. 85108 Pickle Fork, short . . . . Each $1.66



No. 85303 Baby Spoon, bent handle and Food Pusher Per Set $2.40
85001 Baby Spoon, bent handle . . . . . Each 1.20
85276 Food Pusher . . . . . Each 1.20

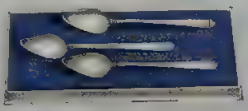
No. 85086 Coffee Spoons. . . . . Set of Six $4.25



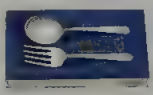
No. 85227 Gravy Ladle . Each $2.70
85226 Cream Ladle Each 2.08

Hollow Handle Carving Sets with Stainless Blades
No. 85436a Meat Carving Set, 2 pieces Per Set $20.00
85437a Game Set, 2 pieces Per Set 15.60
85438a Bird or Steak Set, 2 pieces Per Set 14.00
85439a Bird or Steak Set, 2 pieces Per Set 10.66

No. 85111 Salad Forks, Individual . Set of Six $8.80



No. 85014 Orange or Grape Fruit Spoons Set of Six $6.00



No. 85304 Baby Spoon and Fork, short handles . Per Set $2.40
85002 Baby Spoon, short handle . . . . . Each 1.20
85101 Baby Fork, short handle . . . . . Each 1.20

No. 85202 Butter Spreaders . Set of Six $7.20

No. 85252 Tomato or Cucumber Server Each $3.76

No. 85356 Child's Set, 3 pieces, Solid Handle Knife Per Set $3.34
85353 Child's Set, 3 pieces, Hollow Handle Knife Per Set 4.40
85352 Child's Set, 2 pieces Per Set 3.60

No. 85254 Pie or Ice Cream Server, Hollow Handle.. Each $5.74

All 1847 ROGERS BROS. Silverplate is wrapped in anti-tarnish parchment.

AC SPARK PLUGS

For
Fords

PRICE 50c
Extra Porcelains
For Type U 30c

The Big Selling Types

By tying up with the AC line, dealers are affiliating themselves not only with the most powerful organization in the industry, but with a line which insures them enormous sales possibilities now and for the years to come.

For
Chevrolets

PRICE 75c

AC 1075 for FORDS
⅛" REGULAR
ONE PIECE - - - - - - TYPE "T"
TWO PIECE - - - - TYPE "U"

TYPE "B" for CHEVROLETS
⅜" LONG
Packed in Special Chevrolet Cartons when "Type B Chevrolet" are specified

TYPE A
⅛ inch Regular

for
*Cadillac
*‡Flint
Hupmobile
Jewett
*Nash Light Six
*Star
Whippet

TYPE B
⅜ inch Long

for
*Chevrolet
*‡Oakland
*Buick (to 1924)
*‡Pontiac
*‡Cleveland

TYPE C
SAE Long

for
*Buick
*Nash Special Six
*Nash Advanced
*‡Oldsmobile Six
(to '26)
*Oakland (to '24)

TYPE D
⅛ inch Long Thread

for
‡Dodge Brothers
*‡Chandler
‡Graham Bros.
Cunningham

TYPE W
Long Metric

for
*Hudson
*Essex

*Factory equipment.
‡AC Carbon Proof Recommended.

Other Types of AC Spark Plugs

TYPE E
SAE Regular

TYPE F
⅛ inch Regular

TYPE G
Regular Metric

Metric, Long Body, Long Thread..... L
Metric Long Body, Short Thread ..... M
Regular Metric Aircraft ..... N
Short Metric Special ..... O
Short Metric ..... P
½" Long ..... Q

All AC Spark Plugs 75c, except Type N $1.35; AC 1075 for Fords 50c, and AC Long Life 90c. All plugs packed in container of 10, size 6¼ x 3¼ x 2¾ inches weight 2 lbs., 6 ounces.

TYPE I
⅛ inch Long Body

TYPE N-1
Metric Semi Aircraft

TYPE Z
½" Special

AC Carbon-Proof Spark Plugs Are Made in All Sizes

AC SPARK PLUGS

The Big Selling Types

For **Fords**

PRICE 50c
Extra Porcelains
For Type U 30c

By tying up with the AC line, dealers are affiliating themselves not only with the most powerful organization in the industry, but with a line which insures them enormous sales possibilities now and for the years to come.

For **Chevrolets**

PRICE 75c

AC 1075 for FORDS ⅜" REGULAR	TYPE "B" for CHEVROLETS ⅛" LONG
ONE PIECE - - - - - TYPE "T" TWO PIECE - - - - TYPE "U"	Packed in Special Chevrolet Cartons when "Type B Chevrolet" are specified

TYPE A ⅛ inch Regular

for
*Cadillac
*‡Flint
Hupmobile
Jewett
*Nash Light Six
*Star
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TYPE B ⅛ inch Long

for
*Chevrolet
*†Oakland
*Buick (to 1924)
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*‡Cleveland

TYPE C SAE Long

for
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*Nash Special Six
*Nash Advanced
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TYPE D ⅛ inch Long Thread

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TYPE W Long Metric

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Other Types of AC Spark Plugs

TYPE E SAE Regular

TYPE F ⅛ inch Regular

TYPE G Regular Metric

Metric, Long Body, Long Thread	L
Metric, Long Body, Short Thread	M
Regular Metric Aircraft	N
Short Metric Special	O
Short Metric	P
½" Long	Q

All AC Spark Plugs 75c, except Type N $1.25; AC 1075 for Fords 50c., and AC Long Life 90c. All plugs packed in container of 10, size 6¾ x 3½ x 2¾ inches weight 1 lbs., 6 ounces.

TYPE I ⅛ inch Long Body

TYPE N-1 Metric Semi Aircraft

TYPE Z ½" Special

AC Carbon-Proof Spark Plugs Are Made in All Sizes

SHOWMANSHIP

Talking to Picture Musicians In Their Own Language

Saying It With Thematic Music Cue Sheets Aids the Music Masters to Increase the Effectiveness of Your Picture Presentation

By HERBERT K. CRUIKSHANK

"SAY It With Music," sang Irving Berlin. And America's troubadour might have dedicated his song to the nation's showmen. For the value of proper musical presentation in connection with the showing of motion pictures is axiomatic

Time was when the principal function of motion picture music was to deaden projection room noises. And the noises were preferable to the music.

One day somebody had the germ of a thought. And music cue sheets for pictures came into vogue. And what a joke they were! Just like the first horseless carriage compared to a 120 H. P. Isotta-Fraschini motor-car. You remember. So will your musician The cue sheet was merely a tabulated list enumerating titles of certain compositions. That was all. Perhaps the player was entirely unfamiliar with the number—and of course it was not available at short notice. Or maybe the cue sheet called for a melody having a title something about "Love."

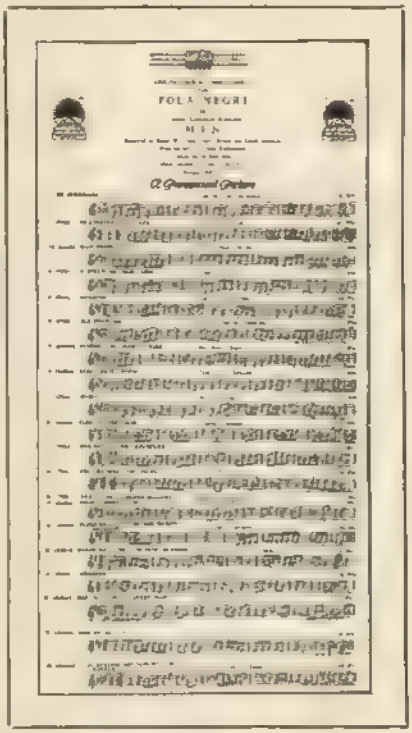
Unless the musician was personally acquainted with the well advertised memory-man, Mr. Addison Sims, of Seattle, he tore his temperamental hair and artistically howled: "Howinell do they expect a guy to know what they're talking about." Into the waste basket went the cue sheet. And properly so.

SUCH was the beginning. And musical presentations continued to be ludicrous. Yet, after all, it was a beginning, and sounded one loud, clear beautiful note in a black and clashing chaos of discord.

Upon such foundation has been builded the structure of motion picture presentation. Until now the pinnacle has been attained in the invention of *Thematic Music Cue Sheets*, which solve the difficulties of musicians, and guarantee showmen that the melody part of the program will be aces

The United States Patent Office describes this showmanship necessity as a simple and improved music cue sheet which will enable a musician to correctly apply musical compositions to synchronize with every action on the silver screen

This is how they work. Look at the illustration. The first cued number is "Dans les Roses." Suppose it is inaccessible. There is a bar of the com-



position itself Hum it over. What is it a gay and festive number? A jazz piece—o the melancholy lament of a lover? What is the mood?

WHATEVER the mood—the theme of the piece, your musician knows one in similar vein. And may substitute fearlessly. There is no chance of presenting a "Hearts and Flowers" scene to the melodic accompaniment of "My Sweetie Went Away." The mood cannot be incorrectly interpreted

Further down the cue sheet appears "Dew Drops." The melodist knows it. But — "let me think — how does that thing go!" With the ancient, and fortunately obsolete cue-sheet, he would be up against it right there. All he would have before him would be the cold type title. Not a bit of help—only the stirring of vague memories of such a tune. Give him the first three notes and he'll play the thing from beginning to end. And that is just what *Thematic Music Cue Sheets* do. There is a whole bar. He hums it and immediately the vague memories take form, and he can swing right into the melody.

SUPPOSE he never heard of the number, doesn't know it, hasn't it, cant get it. Suppose that so far as he is concerned that selection is "out." There is that bar of harmony. He's a musician. On that bar of music he builds a theme of sufficient duration to last during the particular piece of action it covers. Thus the effectiveness of presentation is again preserved by the invention.

Simple but *so* effective. All really big things are simple—after you understand them. It's like the story of the empire that was lost because a horse dropped a nail from its shoe.

Such an idea could only emanate from one thoroughly familiar with the fundamentals of showmanship. For to remedy an evil one must know its cause. So *Thematic Music Cue Sheets* are the gift of one showman to the others. A boon conferred by M. J. Mintz, musician, exhibitor, theatre manager, and life-long showman to the entire fraternity of motion picture entertainment purveyors.

There is no reason for being without this musical exploitation aid. The distributing companies are one hundred percent sold on Mintz's idea. They all provide *Thematic Music Cue Sheets* with their various picture releases.

This is just one of many attention-gripping windows through which First National's "The Sea Hawk" has been publicized to thousands of pedestrians. You can do the same for your showing through the best windows of your city with National Tie-Up window displays.

KEEP

These Pages With Your

'SEA HAWK' CONTRACT

YOU can try to sell gold dollars for a nickel apiece, and if no one knows about your offering business will be bad.

Some such thought must have been in the minds of Associated First National executives when they determined to let the world know just how fine a picture they had in *"The Sea Hawk"* —and when they picked Jack Pegler to do the trick.

And so *"The Sea Hawk"* has won recognition as a box office bird. You have the best showmanship co-operation in the world for your showing. Rafael Sabatini, the author, has done his share. Director Frank Lloyd has done his. Milton Sills also. And First National too. EXHIBITORS TRADE REVIEW likewise. So now it is up to you to take full advantage. For, like Providence, exploitation helps those who help themselves.

For the Chicago showing the novel was run serially by the daily with the greatest circulation. The story occupied half a page each day and was illustrated with stills from the production. During the last ten days each installment was accompanied by a box announcing the coming of the picture to the Roosevelt Theatre.

The paper gave its publication of the novel wide publicity through advertisements in fifty-seven newspapers, a bill posting campaign extending over 125 miles radius of Chicago, and the circulation among newsdealers of special cards and posters. In addition to this each delivery wagon carried posters as shown in the illustration, and the paper made a thorough circularization of readers who had allowed subscriptions to lapse.

By HERBERT K. CRUIKSHANK

EXHIBITORS TRADE REVIEW National Tie-Up Section did its share in securing forty shop window tie-ups in the heart of town. Jack Mills' song *"The Sea Hawk"* was sung and played everywhere. All ten of the National Tie Ups were well represented, and every window was dressed with stills and advertising cards.

Read This Record of What Real Showmanship Has Accomplished For The Sea Hawk Exhibitors of Many States

THE Chicago Tribune gave a theatre party to the hundred children writing the best letters on "Why I Want to See *'The Sea Hawk'*."

The Philadelphia showing will be at the Aldine Theatre, and the city has been plastered from end to end with snipes and posters for two months past. There is a big ready-made audience in the "City of Brotherly Love" that will play the Aldine to capacity.

GROSSET AND DUNLAP already have the photoplay edition on sale in many shops, and National Tie-Up windows are much in evidence.

At the preview showing at the California Theatre, a man made up ala *Sakr-el-Bahr* rode through the streets on horseback, a large sign advertising the showing hanging from both sides of the saddle. The lobby was decorated with cannon and cutlasses.

The New York premiere was heralded by a veritable blizzard of *Sea Hawk* paper. Artistic lithos publicized the production from the housetops. Literally so, for the difficulty of procuring 24-sheet space in the center of the metropolis made the use of elevated bill posting compulsory, and sky-line paper was liberally used.

One National Tie Up—the book—secured seventy-five windows in the metropolitan area alone, and tie-up windows pulled business to the Astor Theatre from as far a distance as twenty-

five miles. In addition to other big store windows, a furore was caused by the display of original costumes in Stern Brothers' Department Store on Forty-Second Street, New York City The sixteenth century apparel and martial equipment made a colorful and spectacular window. It brought throngs to the store, and secure be congratulations, co-operation and continued support of the management on the National Tie-Up.

THE very best shops in New York fell in line with window showings, and each of them increased business for the Astor, and for the tie-up articles.

Another feature of the New York showing which gained wide and favorable comment was the prologue. It consisted of a group of pirates drinking, singing songs of the sea, and dancing the hornpipe. Although the presentation at the Astor Theatre is perhaps too elaborate for the average exhibitor, nevertheless, the idea may be adapted on a lesser scale and will prove a drawing card for the attraction.

Three motor caravans of billposters have thoroughly covered New England. One truck proceeded up the Eastern shore through New Haven, New London, Narragansett, Providence, Fall River and Boston. Another journeyed to Hartford, Springfield, Worcester and Boston. Then both these worked around Boston and proceeded North to the Canadian line.

The third truck left a wide trail of *Sea Hawk* paper from New York to Albany, Schenectady, Amsterdam, Little Falls, Utica, Rome, Syracuse, Oswego, Rochester, Albion, Niagara Falls, Buffalo, Canandaigua, Geneva Auburn, Ithaca, Binghamton, Catskills, Monticello, Goshen, Suffern and Nyack

A similar campaign is now being executed in Michigan, Missouri, Illinois and Indiana. Pennsylvania and New Jersey have already been covered. Each motor-truck carries an initial equipment of 150 stands 200 8-sheets, 500 3-sheets 3000 1-sheets, 100 banners and 2000 cards This supply is replenished by shipments picked up along the line. Every biller is a former circus man; no space is overlooked

IN fact the bill-posting campaign is being handled as though for a "big top" showing, and is without doubt the most extensive and remarkable yet undertaken in exploitation of motion pictures.

Remember that the showings thus far have been during the dead summer season. And the exploitation campaign in connection with the picture is one wonderful example of how a warm weather slump may be "sunk without a trace" The "S. R. O." and "*Selling Four Weeks in Advance*" signs have been much in evidence, and it is impossible that "*The Sea Hawk*" will be anything but astounding financial success, creating new records for legitimate high priced theatre runs

Then Take Full Advantage of Every 'Trick' For Your Showing of 'The Sea Hawk'

Another way to tell the world about your showing of First National's "The Sea Hawk." Tie-Up with the local papers or dealers making wagon deliveries.

There is not a single *Sea Hawk* exploitation idea that cannot be used by you when you play the picture. Perhaps not all of them in the original form, but the few that must be adapted for your needs may be very easily altered

EXHIBITORS TRADE REVIEW supplements the press book with ten big national manufacturers who have offered their assistance on a National Tie-Up campaign in connection with the picture.

A million dollar merchandising organism is all set up and oiled to help you do big business on this big picture. Profit by the publicity which has been accorded it. Adapt every stunt outlined in "*The Sea Hawk*" National Tie-Up Section and the Associated First National press book. Clip every coupon that will secure for you the hearty co-operation of the ten national advertisers. In a word, do your share to complete the last link of the chain which will tie-up your Sea Hawk box-office receipts with some of the best exploitation that has ever been offered to exhibitors on any picture.

Live, Love and Laugh with

Douglas MacLean

in "Never Say Die"

From William Collier's Greatest Comedy Success
The Play by Wm. H. Post
Directed by George J. Crone
with Lillian Rich, Helen Ferguson in
the cast of fun-makers

NATIONAL AND LOCAL Tie-Up SECTION

CO-OPERATIVE

Every Week a Different Feature. Every Issue a Section of Opportunities

Turn Window Shoppers Into Movie Patrons and You Fear no Competition

Copyrighted 1924 Exhibitors Trade Review

Constructive Incentives for EXHIBITORS and Local Merchants

Stick This Section In the Safe!

It Means Good American Dollars in the Bank For You

WHAT'RE you sellin', Showman? Something the people want—or something they don't?

Give 'em what they crave and they'll buy plenty! What the world wants most is laughter. And that's what Doug MacLean gives nothing else but in Associated Exhibitors frenzied farce "Never Say Die"

Play the picture, clip the coupons in the National Tie-Up Section, and you will perform the modern magic of changing chuckles to shekels

It's more than a "wow" — it's a "wham" And a wham" is a show that will make a deaf and dumb audience shout for more with shrieks of joy

Associated Exhibitors brilliant comedy picture "Never Say Die" offers exploitation possibilities galore. For instance, still number 82 is appropriate for window displays on a wide variety of subjects—hats, gloves, and every sort of wearing apparel.

At first "Never Say Die" was a stage play by William H. Post. Willie Collier played the lead and left a line of laughter from coast to coast It was produced for years both here and abroad, and always with the same result — audiences and showmen were alike hilarious. The former over the opportunity to "laugh it off" the latter over the golden Niagara that cascaded into the box-office

There's a laugh to every foot of film. And there are 5,891 feet. Over a mile of smiles. No time wasted. From the entry of MacLean in the person of Jack Woodbury the blue-banishing comedy never abates until the final fadeout.

The most confirmed sorrow seekers will forget their woes, and laughter-lovers will revel in each scintillating pleasantry.

To give you an idea—

THERE'S nothing wrong with Jack He's a husky young American with plenty of money and health to enjoy all the good things of life. But he happens to meet a friend by appointment in a private hospital. While waiting he casually seats himself in a wheel-chair The eminent physicians mistaking him for a patient, pounce upon him, apply the stethoscope to his heart and tell him he has but three months to live. "A most unusual case," say they And well they may be puzzled for the heart murmurs they hear are the buzzings of a bee that blunders into the heart-tester, and later implants a well-placed sting on Jack's manly bosom. Naturally Jack lets out a howl of pain. That settles him. The medicos' suspicions are confirmed.

But they apply another test. They blindfold Jack and tell him to walk about the room. In a heated argument regarding his symptoms they forget all about the patient, and he calmly walks out the window onto a narrow ledge high above the street. Thrills and laughs! Oh boy! He has one foot poised ready to step on—nothing But some safe-movers are hoisting an iron money-container to the floor below, and one of them shouts "Stop" to the man at the winch. Jack thinks it is one of the doctors and stops. "Left" shouts the moving-man, and Jack turns in that direction. You can figure the rest for yourself. It's a scream!

THEN there's Jack's friend, Hector. And Hector's sweetheart, Violet. Don't overlook her. Jack didn't. Hector's a nice boy. When Jack tells him the sad tale of having but three months to live, dimeless Hector fixes things so that Jack leaves him his entire estate. But there is a trick in it. Jack's money can't go outside the family. But Hector, clever youth, has the answer. That's how come that Jack marries Hector's fiancee. She goes to Florida,

Hector goes to Paris on Jack's money And poor Jack settles down to fill in the three months left him in this merry world.

HOW is that for a mirthful situation? But that isn't all. Not the half of it.

Hector's awfully put out when he finds Jack alive at the end of three months. And Jack actually apologizes for not dying as per schedule.

Then in a whirlwind mirthquake appear Violet, Jack's wife and Hector's fiancee; "Gun" Murphy, the vicious gangster with a face as blank as a river on a quiet, cloudy day, and a heart as hard as that of a pawn-broker; the divorce procuring sleuth; "La Cigale," the grasshopper, a little "vamp" from gay Paree who has danced her way into Hector's fickle affection. Action? Wow!

Jack and Vi find they really love each other — even though married. He makes his get-a-way from the entire mob. Are his troubles ended? Not by a darned sight!

He hops a cab—with the gunman in hot pursuit. The cabby is "plastered," and falls from his seat. The horse runs away. Jack is tickled to death. He thinks they are making fine time, and shouts encouragement to the place where the cabby should be.

The laugh doesn't stop there. The harness breaks, and horse and cab part company. The cab goes careening on its way and the horse — follows on *behind* the cab instead of *before* it.

JACK notices a few narrow escapes from crashing into trees, motor-cars, and so on, and a slightly worried expression comes into his eyes. He looks back to make sure his pursuers are outdistanced—and has to laugh. Someone has lost a horse. There it is following his cab. Ha-Ha! It's too good to keep. He sticks his head out the window to tell the cabby. Only there is no cabby—no horse—no anything. Just Jack and his wild cab dashing madly toward —

Well, anyway, in the end everything is alright, and your audience will file out after the best evening's entertainment procurable in celluloid

Honestly, "Never Say Die" is a knock-out. But you must tell 'em about it. Let 'em know what you're selling And with this show that is easy

There are as many exploitation possibilities as there are laughs — and that's going some. Associated Exhibitors have done all they can to provide you with showmanship material For instance, there is the "Button Insurance Policy." The idea is to give patrons buttons to replace those that are sure to be bursted off in the throes of merriment. The exchange will provide special "Never Say Die" buttons, or ordinary buttons may be procured locally

THERE are some cracker-jack suggestions for program pages, theatre fronts, lobbies and publicity stunts. Take advantage of these ideas, read every line of this National Tie-Up Section, use every means in your power to let folks know about your show. Because everyone that sees "Never Say Die" from that time on is going to be a loyal friend of your theatre and to yourself.

All you have to do is to let them know that you are showing the attraction, and they will come in crowds

And the very best way to publicize the photoplay is through the medium of window displays. EXHIBITORS TRADE REVIEW provides you with the cooperation of *national* advertisers whose products are known to everyone. But you, yourself, can help the show materially by applying the National Tie-up idea to local conditions.

There are firms in your town that are locally famous although lacking national distribution. Get the aid of these merchants. Yours is not a one-sided proposition. It has been proven that motion picture window displays in connection with any type of merchandise will attract attention to the goods on view, and will boost sales.

Go after new business. Don't confine your sphere of action to within a few blocks of your theatre Play up the windows in another section of town. Arrange to have tickets for your show sold in these shops You will be surprised at the brand new patronage you may thus secure. Try it out. It is easy to check up by means of the tickets turned in at the gate.

Try to get action in your windows Something that looks alive. If possible something that moves. A motor car agency noted for its wonderful windows, features its cars in country scenes, and has live chickens, or ducks or rabbits in the windows. And wax figures sit in the car, while a concealed fan stirs veils, and ties.

Give a little care to your execution of the National Tie-up idea, and you won't regret it

Each week a great number of showmen are profiting by the successful experiences of the pioneers, and are cashing in on the additional publicity which they obtain free through this section

It is high time to get on the bandwagon. Play all the National Tie-up Pictures, and take full advantage of the windows, and other exploitation ideas offered you in connection with each through EXHIBITORS TRADE REVIEW

Still 114 from Associated Exhibitors "Never Say Die" offers a fine tie-up for photographs, frames, vanity cases, gloves, gowns, wraps, furs and masculine apparel.

Make a Lane of Laughter Lead to Your Theatre With 'Never Say Die' Windows

THROUGHOUT the action of "Never Say Die" Doug MacLean looks like an ad for "What the Well-Dressed Man Will Wear." Doug is a knock-out in the picture, and his clothes are models of sartorial elegance His suits of the "last word" one better

There are a dozen different stills showing the young comedian in as many different changes of apparel as a Follies star. Number 83 shows him carefully scanning the habiliments of a less dressy individual, while the girl in the case, and Doug's valet seem to be regarding the hero's immaculate dress with great approval. Number 10 displays a grey business suit in great style, while No. 86 shows morning attire

> Don't Have Indigestion!
> Enjoy a Good Meal Here
> and a Good Laugh at The
> City Theatre Now Showing
> "Never Say Die."

Verchesi, the chef, plays quite a part in the picture, and stills featuring him will give you a logical tie-up with restaurants, caterers, fruit stores, and in fact any shops handling edibles

Stills Nos. 157 and 156 will give you a dozen different ideas on how you can boost business for the food purveyors as well as for your theatre

One of many stills from "Never Say Die," the Associated Exhibitors photo-comedy, that will increase patronage for your showing, and business for the hat dealer.

Here, also is a library tie-up. The play has been published, and both public and private circulating libraries will increase their clientele and make you patrons by cooperating for publicity

You can also call attention to your attraction by means of cards in libraries, reading rooms, or other places where silence is expected and required.

> Silence
> No Loud Talking or Laughing
> If You Want to Laugh
> Go to the City Theatre
> and See
> "Never Say Die."

One of the biggest "kicks" in the picture is the horseless cab. It suggests a tie-up with taxi-cab or omnibus companies. It might be arranged to have patrons driven to the show at half-rates. The taxi-men could sell tickets, or a refund could be made at the ticket office by arrangement with the company. Of course this stunt would only apply to a given radius

> This Driver Is Safe, Sane and Sober
> See the Runaway Cab in
> "Never Say Die"
> We'll Take You to The City Theatre
> At Half Rates

Don't overlook the fact that Doug's hats, shoes, and all other dress accessories are just as correct as the major articles of his dress. His gray Fedora is prominently featured in stills Nos. 2, 18, 6, and 1. And Nos. 206, 203, 205 and 208 prominently display a jaunty cap which will surely increase sales on that type of headgear for the merchant

> Doug MacLean in "Never Say Die"
> Thinks a Leaking Fountain Pen
> Worse Than a Leaking Heart Valve
> Keep Your Temper—Use a Non-Leak
> Fountain Pen, and Laugh at the
> Photoplay at the City Theatre

During the action of the picture Doug has occasion to sign a check. As is usually the case when one signs a check to give away, fountain pens are offered him from every direction.

The stills of this scene showing the hero selecting one of the pens offers a fine tie-up for fountain pen window display. There are any number of ideas that can be worked into a window card

The MacLean smile bids fair to become famous. And every time his face wreathes in smiles, he displays a set of

teeth that may well be the envy of all those admiring dental perfection. So tie-up with any dentifrice, and fix up a drug store window replete with tubes of dental beautifier and stills of Doug MacLean and his smile.

> Don't Be Ashamed to Smile!
> Beautify Your Teeth
> With Sweeney's Dentrifice
> Then Laugh to Your
> Heart's Content
> At "Never Say Die" Now
> at The City Theatre

Lillian Rich, as the heroine, and Helen Ferguson, who plays the "vamp," are both, oh! so easy to look at. And such gowns!

Just to give you an idea, take a look yourself at stills Nos. 13A, 116, 129, 88, 149, 155, 125, and see for yourself. And —sh—look at No. 98, and some of the others where the bold, bad detective is scattering "evidence" in the form of the daintiest lingerie promiscuously about Doug's perfectly decent apartment.

> Cure That Cold With
> Blimp's Cough Cure
> And Cure the "Blues"
> By Seeing "Never
> Say Die" at City Theatre

A line for a drug store pushing a cough cure, cold cure, hay-fever cure, or any other kind of cure

Also there is the well-known preparation called "Rit." The line is obvious—"Never Say Dye—Say Rit!"

Then there is a chance to do business with a cleaning and dyeing establishment. In this connection you might arrange for some throwaways—to be paid for by the cleaner—borrowing for the occasion some such doggerel as: "We dye to live, while others live to die. The more we dye the better we live; the longer we live the better we dye."

Tried and Proved Pictures

The Effect of Box Office Endorsement

WHAT is the effect on a neighborhood theatre, by running "Tried and Proved" pictures, especially after they have been run in the Main Street theatres?

Here, indeed is a problem that some time or another faces the average exhibitor, and deserves therefore to be discussed by this department.

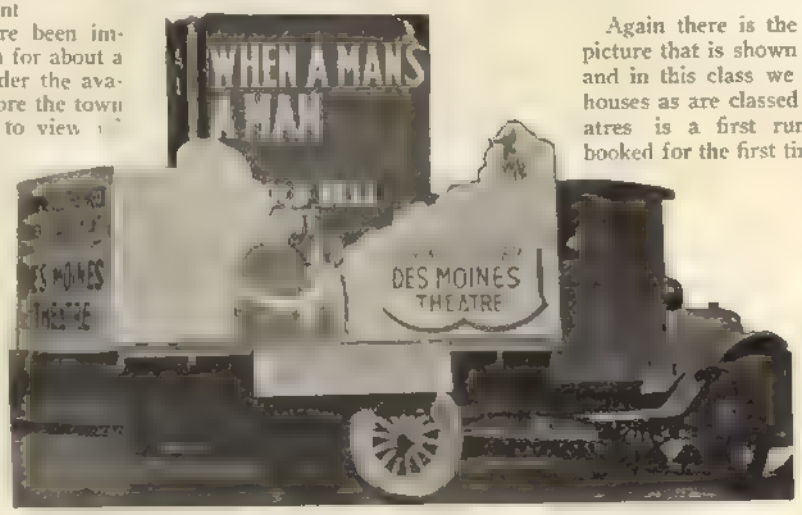
How often has a picture been immense on Main Street—run for about a week—and then buried under the avalanche of new pictures before the town as a whole has been able to view it? Does the neighborhood theatre have an opportunity to immediately follow up with the same film? Hardly ever. And when it does the price of the picture is so very close to what the Main Street price was that the local patronage doesn't enable the exhibitor to pay any such figure.

Therefore, he must either content himself with the showing of pictures made "before the war," or else take such independent pictures that lack star, story, beauty, or sales appeal.

Still there is another way out which the wise exhibitor knows and heeds. That way is the path of the "Tried and Proved" picture. With these pictures, their previous showings have increased their values rather than lowered them from an audience standpoint.

Film plays that have been successful, that have had the endorsement of many audiences, and which have been proved by many box offices, have the right of way when it comes to getting pictures that will please.

In this regard it must be admitted that exhibitors may be classed in two ways. Those who are weak and see only the fact that they must have first runs or the old withered pictures of questionable age; or the strong who consider their box office and their patrons at the same time.



A bit of excellent exploitation at a nominal cost for First National's "When a Man's a Man." The scenic effect was a 24 sheet cut out and mounted. The truck was loaned.

No business can long proceed unless it is a profitable business. Even the running of a motion picture theatre must be a profitable matter if it is to continue. Neighborhood theatres must dwell upon the theory that their patrons do not always see the showings downtown, and yet these same patrons have a right to expect that the good pictures be shown locally. With this in mind the strong exhibitor books such pictures as are universally known to be good even though they have passed [illegible]

With such pictures, the experimental angle has been passed, and there is a definite call for pictures locally that are good and whose star is acceptable, and whose story has been found to prove up on review. Let the big city critics guide you in the selection of your pictures.

Again there is the thought that any picture that is shown in a local theatre, and in this class we also include such houses as are classed as "average" theatres is a first run whenever it is booked for the first time in that particular locality.

"Every man for himself" is true in the picture business as well as anywhere else, and when the expensive pictures do not bring out the crowds that are needed to pay their costs, then the only profitable way is to put in a policy of "tried and proved" pictures that have the assurance of success behind them.

The fact remains that whether a picture is first run or not the local patrons will want to see it if the story is good and the picture built around a star that is a known player. Give them good pictures regardless of their age, and you will win their confidence and patronage.

It is always easier to follow through a good campaign that has proved successful somewhere else, that draw up your own at a moment's notice and which may not have the "pull"

When "The Covered Wagon," Paramount's classic ran in Los Angeles, Calif., a parade down through the principal streets was arranged by the exhibitor and his publicity director. This novel exploitation stunt attracted much public attention.

HOW *They Became Tried and Proved*

The Stunts That Built Up Patronage

Giving the Pioneer His Inning

Everywhere the progressive exhibitor can find local facilities for exploitation of pictures of outstanding prominence. People are fast to participated in aiding such films as are known to have historical or human interest value.

We have in mind as such a picture, "The Covered Wagon." Here's where dramatic and effective setting can be worked around to excellent advantage, and attention creating ballyhoo, having strict picturesque possibilities often makes co-operative community effort a real bit of exploitation. In the West and in the Southwest, active participation in "Covered Wagon" stunts are apparently the vogue.

Pioneer celebration re-unions are being held throughout that country where the pioneers struggled through in their canvas caravans and in some instances the towns find many of the old families were either actual participants in the settlement of the country, or else their descendants still live who were.

Such exploitation means are good advertising—and in Weatherford, Texas, the showman there sent out a cordial invitation to all such as were known to be pioneers to attend the premiere as the guests of the house. Twenty-six such settlers were present.

* * *

Contests With a New Theme

Whenever Gloria Swanson shows in a certain town there is sure to be widespread interest in her pictures—she has received overwhelming votes in all popularity contests held there. When recently "The Humming Bird" was booked, boy impersonation contests were opened to the girls of the town—and proved indeed quite a stimulus to business.

Fourteen entrants in the two nights' booking were awarded prizes in true amateur night fashion while crowded houses watched the proceedings with much personal and community interest. This was indeed an entirely appropriate stunt and well received by the people of the town.

* * *

'Movie News' Issued for Window Display

When a theatre man puts his mind to it he finds many ways to inveigle neighboring druggists and others to lend part of their plate glass windows for advertising his pictures.

In Chicago, the director of publicity for McVicker's Theatre issued a window sticker with the title "Movie News" printed across in red, and showed a rather large picture of Pola Negri seated at her dressing table mirror applying rouge to her lips. Below the picture was the caption, "Pola Negri makes up for one of the scenes in her latest Paramount picture, "Lily of the Dust"—and in bold face caps, We carry a complete line of toilet preparations."

Thus the druggist was given a good advertising medium for himself as well as the picture and the star.

A novel window display which secured considerable attention due to its curious aspect gave a real effective tie-up for Paramount's release, "The Bedroom Window."

An Icy Contest

In Topeka, Kansas, the stunt that they pulled to advertise "Ice Bound" was indeed ingenious.

In front of the city's leading drug store, they placed a 500-pound cake of ice in the center of which had been inserted a lobby card advertising the picture.

Frozen in with the card, an announcement bore the offer of a prize of $5.00 to be awarded the person who should correctly guess the nearest to the hour, minute, and second when the huge cake of ice would be melted. Printed slips were distributed in the drug store providing blank spaces for the guesses and the name and addresses

The first radio window tie-up on the song "Secrets" which was written in appreciation of Norma Talmadge's success in the First National picture "Secrets."

of the guesser. They also advertised "Icebound" Sundaes.

Thirty-five hundred slips were distributed—and over twenty extra gallons of ice cream were sold by the druggist.

The newspapers took up the theme and gave widespread publicity to the stunt. All of this direct and indirect advertising helped the exhibitor to put the picture over.

* * *

Newspaper Campaign for 'Men'

"What do you know about men?" inquired a teaser ad in all the newspapers of Oklahoma City one bright day.

There was no name signed to the ad—and no one knew that it had any connection with a picture. This went along, spotting the pages with one-inch ads attracting much attention and teasing the readers into guessing what it was all about.

You Only *Think*

you've seen good advertising tie-ups with a motion picture!!

wait till you've seen next week's National Tie-Up Section on this great action picture!

C. C. Burr presents

Johnny Hines *in*

The SPEED SPOOK

JOHNNY HINES

is a bigger box office bet than ever before in his career, and a powerful supporting cast including

Faire Binney, Edmund Breese, Frank Losee, Warner Richmond and Henry West

In the unusual picture

"The Speed Spook"

By William Wallace Cook

From the story presented in Top Notch Magazine

Directed by Charles Hines

Scenario by Ray Harris

Continuity by

CHARLES GILSON and JOHN GEISEL

The first of a series of three Hines pictures to be produced by

EAST COAST FILMS

INCORPORATED

C. C. BURR, MANAGING DIRECTOR

Sales Office 133W. 44th St

NEW YORK, NEW YORK

DISTRIBUTED BY THE BEST INDEPENDENT EXCHANGES

Greater New York and New Jersey rights controlled by Commonwealth Film Exchange, 729 7th Ave. Exclusive Pennsylvania & Southern New Jersey — Ben Amsterdam Enterprises, Masonic Temple Bldg., Attractions, 1327 Vine Street, Philadelphia, Pa. New England States by American Feature Film Company, 1 Piedmont St. Boston, Mass. Ohio by Standard Cole Seal Productions Inc. Film Bldg., Cleveland, O., Minnesota, North Dakota and South Dakota by Exclusive Film & Realty Company, Loew Arcade Bldg., Minneapolis, Minn.

ENTIRE FOREIGN RIGHTS CONTROLLED BY SIMMONS-KANN ENTERPRISES, Inc. 729 West 42nd Street, New York City

How to Publicize the Title 'NEVER SAY DIE' So It Will Make You Money

WE of the twentieth century are prone to ascribe all things to the age of jazz. We like to consider ourselves "go-getters," and to grab off all possible credit for "new fangled" ideas

So it is with the slogan. No campaign—merchandising, fund-seeking, presidential, or whatnot—is considered to have a ghost of a show unless its kite is well-tailed with a slogan.

Thus we have "Ask Dad He Knows," "A Man May Be Down But He's Never Out," "Keep Cool with Cal," and so on. And we think that in this catch phrase advertising we have something new under the sun.

However, there were showmen before modern sales methods existed. And they used slogans. One of them was "Never Say Die." There's a ring to that phrase which is true steel. And it will ring in box office gold for you

Here is a rattling good chance for a good square publicity wallop not so obvious that it may be spotted a mile off as advertising.

Get one of the newspaper boys to write a good story on slogans in connection with a contest to select a real live one for the home town.

In this story stress the world-famous slogan "Never Say Die." Its history is intensely interesting. Originally it was the battle-cry of France. When the noble knights riveted on a new iron suit and staggered forth to combat, the w. k. welkin rang with muffled shouts of "Never Say Die." The slogan rang down the centuries to the day of Napoleon, when in slightly altered phrase it re-echoed on the fatal field of Waterloo as "The Guard Dies But Never Surrenders."

FROM France it went to Bonnie Scotland, and as "Nei Sae Dee," was shouted through the banks and braes by the loyal legions of Mary, Queen of Scots. And so through many centuries this noble slogan has inspired hope in many lands. Now it comes to your aid in repelling the enemies of showmanship, and it may be depended upon to rout every box-office bugaboo

Play up this slogan. Run it as a teaser ad. Print it in different languages. Identify it with history. Stage school essay contests. Tie-up with worthy local charities. Have sermons delivered on this text Stick with it 'never say die."

The Auto Vacuum Ice Cream Freezer

Beats Alaska For Keeping You Cool

THE story of the Klondike—in the land of the Yukon as told in "Chechahcos" so strongly suggests the idea of keeping cool that it is extremely doubtful if, anywhere in the world, there could be a better exploitation tie-up for you than that you can get from the Auto Vacuum Freezer Company through their

'CHECHAHCOS'

WINDOW DISPLAYS

All you have to do is mark the spot in the "Chechahcos" coupon and the big co-operative merchandising ball will start rolling. You will then reap the benefit of all the national advertising on the greatest ice cream freezer in the world.

Auto Vacuum Freezer Co., Inc.

226 West 42nd Street New York City

National Tie-Up Windows Now Available

'HER OWN FREE WILL"
118—Her Own Free Will Story . Book Shops
117—La Supreme Pearls ... ... Jewelers
116—Vanity Fair Underwear Women's Wear
115—Delicia Lipstick ..... Beauty Shops
114—Delica-Brow ..... Beauty Shops
113—Fashionette Hair Nets .... .Drug Stores

'INTO THE NET"
112—G. G. G. Clothes .....Clothing Stores
111—Hollywood Hats ..... Hat Shops
110—Gropper Knit Ties ..... .Haberdashers
109—El Producto Cigars ... .Cigar Stores
108—Pebeco Dentrifice ..... Drug Stores

"THE ARAB'
107—Temple of Allah Incense. . Drug Stores
106—The Arab Song..... Music Stores
105—Gouraud's Oriental Cream Drug Stores
104—Sanka Coffee.. . . . Grocers
103—Ramsea Perfumes.....Drug Stores
102—Gulbenkian's Rugs .... House Furnishers

'FIRST NATIONAL" TIE-UPS
101—Ashes of Vengeance Book .. Book Shops
100—Ashes of Vengeance Song .. Music Shops
99—Boy of Mine Song .....Music Shops
98—Ponjola Book .....Book Shops
97—Penrod Clothes ..... Clothing Stores
96—Sure-Fit Caps .....Hat Shops
95—Kleanet Hairnets .....Beauty Shops
94—Propper Hosiery .....Women's Wear

'CAPTAIN JANUARY"
93—Baby Peggy Story Book .. Book Stores
92—Security Blanket Fasteners Children's Wear
91—Baby Peggy Stationery Stationery Stores
90—Westphal's Shampoo . . Drug Stores
89—Junior Coats and Suits Children's Wear
88—Wayne Knit Socks . . .Children's Wear
87—Kummel Juvenile Dresses .Children's Wear
86—Baby Peggy Dolls ..... Toy Shops
85—Baby Peggy Underwear ..Children's Wear
84—Baby Peggy Hats ..... Millinery
83—Baby Peggy Handkerchiefs Children's Wear

"FAMOUS" TIE-UPS
82—Garcia Grande Cigars ... ... Cigar Stores
81—Triumph Hosiery .. .. Women's Wear
80—Kleanet .....Drug Stores
79—Regent Knit Ties Haberdashers
78—Aubry Sisters .... Beauty Shop
77—Coro Pearls . .....Jeweler
76—Chex . Drug Store

'SHOOTING OF DAN McGREW"
75—Vanity Fair Underwear ....Women's Wear
74—Djer-Kiss Compacts .....Drug Stores
73—Victor Record (No. 55218) ..Music Stores
72—Richelieu Pearls .....Jewelers
71—Amami Shampoo ..... Drug Stores
70—Fashionette Hair Nets .....Drug Stores

"SHERLOCK, JR.'
69—Fownes Gloves ..... Haberdashers
68—Djer-Kiss Compacts .....Drug Stores
67—Melto Reducing Cream .....Drug Stores
66—Gage Hats .....Milliners
65—Regent Pearls .....Jewelers
64—E. Producto Cigars Cigar Stores
63—Pebeco Tooth Paste Drug Stores

"MIAMI"
62—Gotham Gold Stripe Women's Wear
61—Rigaud's Talcum ..... Drug Stores
60—Vogue Hair Nets . Drug Stores
59—Cappi Perfume .. . Drug Store
58—Chappel-Harms (Miami) Music Stores
57—Kleinert Bathing Caps Women's Wear
56—Jantzen Swimming Suits .Women's Wear

"BOY OF FLANDERS'
55—Jackie Coogan ..... Confectioners
54—Ingersoll Watches Jewelers
53—Jackie Coogan Chocolates .Confectioners
52—Borden's Milk .. ..Grocers
51—Jackie Coogan Hats .....Hat Shops
50—Grosset & Dunlap .....Book Dealers

"THE SEA HAWK'
49—Tudor Silverware .....Jewelers
48—Blue Bird Pearls .....Jewelers
47—Van Raalte Apparel .....Women's Wear
46—Fownes Gloves . Haberdashers
45—Conde Cosmetics .. . . . Drug Stores
44—Bonnie B Hair Nets . Drug Stores
43—Old English Lavender Drug Stores
42—Mystikum Perfume Drug Stores
41—Jack Mills Music . . Music Stores
40—Grosset & Dunlap Book Dealers

MISSING DAUGHTERS"
39—Gordon Hosiery Women's Wear
38—Forest Mills Underwear Women's Wear
37—Omar Pearls . . . .Jewelers
36—Pebeco Tooth Paste Drug Stores
35—Crena-Crosa Brassieres Women's Wear
34—Gage Hats ..... Milliners
33—Wonderstoen Hair Eraser Drug Stores

"PERFECT FLAPPER'
32—El Producto Cigars ..... Cigar Stores
31—Winx Lash Nourishment Drug Stores
30—Wonderstoen Hair Eraser Drug Stores
29—Hygienic Powder Puffs Drug Stores
28—Melto Reducing Cream Drug Stores
27—Vanity Fair Frocks . Women's Wear
26—Per Rouge . Drug Stores
25—Mererava Drug Stores
24—Djer Kiss Products Drug Stores
23—Regent Pearls Women's Wear
22—Frances Faire Frocks Drug Stores

"CHECHAHCOS'
20—La Palina Cigars ..... Cigar Stores
19—Thermo Sport Coats .. Men's Clothing
18—Sterno Canned Heat ..... Drug Stores
17—Borden's Condensed Milk .... Grocers
16—Zephyrized Knit Underwear Women's Wear
15—Auto Vacuum Freezer Housefurnishing

'RECOIL"
14—Chinwah Perfumes Drug Stores
13—Nemo Corsets Women's Wear
12—Venida Hair Nets Drug Stores
11—Boncilla Beauty Clay Drug Stores
10—Delsah Pearls . Jewelers
9—Inecto Hair Tint Drug Stores
8—Onyx Hosiery Women's Wear

"BEAU BRUMMEL"
7—Sta-shape Hats .....Hat Shops
6—Vivaudou .....Drug Stores
5—Mineralava .....Drug Stores
4—Sampson Dress Jewelry .....Jewelers
3—Personality Clothes Men's Clothing
2—Fashionknit Ties Haberdashers
1—Glove Industries Women's Wear

Name . . . Town . . . Tie-Up Numbers . .
Theatre . . . . . State . . . . . Play Dates . . . . .

Making 'em Look

Stunts That Will Stop 'Em Any Time—Any Place

IF there is an electric run-about in town, or other type of motor vehicle you can fix up to look as much as possible like a horse-drawn cab, you can get sure fire publicity. One of the highlights of the picture is the runaway cab with the horse following it. Have your "cab" driven through town with a horse hitched to the rear. If you can get a horse that will follow of its own accord so much the better. Cards on the front and sides of the cab—and horse too, for that matter—may advise the public that "even with the cart before the horse nothing can keep me from seeing 'Never Say Die' at the City Theatre." Another: "Laugh at the horse that follows the cab in 'Never Say Die'" Any similar ideas will get across as well.

In the picture there is a belated honeymoon. This is sufficient excuse for you to send special invitations to all the newlyweds of your town to see the picture as your guests. Don't necessarily advertise this in the papers. Watch the marriage announcements, and write personally to the various couples congratulating them. Feature the "live, love and laugh" idea, and say you will start them on the right road by providing the first big hearty laugh in their married life. And hope that they will continue to laugh always.

You can get front page space by giving a "Never Say Die" matinee for the chaps who "are down but not out." If there is an organization such as the Salvation Army in your town—an outfit that helps the boys who are down in their luck—arrange to give a special showing of the film for them. Get interviewed about it, and tell the press that you consider the picture the very finest sort of inspirational sermon

IN connection with the showing have some local minister or other character deliver a talk on "Never Say Die." telling this peculiar audience that although they may be pretty badly battered up they are still in the ring with a good chance to win out in the battle of life

Incidentally, don't forget that a good act advertises itself—either "on" or "off"—and if you can tie-up with some concern that will give jobs to a few of the unfortunates you will reap a reward—not only in Heaven, but at the box-office

A bee is what starts the fun in "Never Say Die." Surely you can secure a hive to exhibit in your lobby—under glass! The interesting little insects will surely attract the passerby, and a card calling attention to the bee in the picture will help sales.

You can pull a lot of funny ones with this. For instance: "Pick out the bee that fooled the doctors in 'Never Say Die,' "Bee yourself! You can't get stung by seeing 'Never Say Die'"

DON'T forget that in selling "Never Say Die" you are selling laughter. Play this feature for all it is worth. Folks love to laugh. Tell them they can at your theatre. Run some copy along the line of: "The doctors said he'd die in three months, and he laughed it off. Laugh off your troubles watching 'Never Say Die' at the City Theatre."

Throwaways of "prescriptions" giving a sure cure for the blues in "Never Say Die" will also help you to advertise that you are holding over the film.

It might add a touch to have your ticket-taker garbed as a cabby, and the usherettes dressed as trained nurses Remember also that an attractive lobby will always help sell your show. It is like attractively packaged merchandise. The box helps sell the product.

Do your share on "Never Say Die" exploitation, and both you and your patrons will enjoy the showing one hundred percent. You will get paid for giving them what they want, and they will be satisfied in having gratified a desire for laughter and clean, wholesome entertainment

A suggestion for window display of mens' headwear in connection with your showing of Associated Exhibitors release "Never Say Die." Douglas MacLean's gray Fedora figures prominently in many stills.

Cash in to the limit
With Accessories and Window Tie-ups
For Mac Lean's latest Laugh-burst

4-Page Roto Tabloid:—

Effective and catchy Pictorial bally-hoo.

100,000 of these Rotos have already been distributed at the first five pre-release showings of "Never Say Die."

Bully House Souvenir.

When you play

"Never Say Die"

—and you will—

use every one of these accessories

and window tie-ups to

"tell the world"

you've got the

season's greatest comedy

This Smashing Window Card Hits the eye and ornaments any window with its striking colors

3000 were used in Los Angeles alone!

LIVE LOVE AND LAUGH

"Never Say Die"

We Are Proud!

YES, we are mighty proud of Vogue Clothes because they Talk *Style*, Look *Style* and Show *Style*. They give us confidence because they give their wearers confidence.

In turn, we believe you are just as proud of your theatre and your attractions, especially "Never Say Die," featuring Douglas McLean. That too stands for confidence.

That feeling should prove a mighty link of co-operation between you and our dealer in your community. EXHIBITORS TRADE REVIEW is helping. We are ready to help. Let's Go! Sign and mail the coupon below.

Vogue Clothes Give You That Feeling

Of Confidence and "Never Say Die"

THE thought expressed in the above heading, enhanced by a co-operative window display of scenes from the picture "Never Say Die" and a neat layout of Vogue Clothes, means more profits for all concerned. Let us all get together through your signing and mailing the attached coupon.

L. BLACK CO. Rochester, N.Y.

New York Office: 200 Fifth Avenue

CLIP THIS COUPON

EXHIBITORS TRADE REVIEW,
45 West 45th St.,
New York City.

Please have L. Black & Co. makers of Vogue Clothes, get in touch with me immediately and notify their dealer in my community so that I may take advantage of the tie-up between their clothes and my showing of Douglas McLean in "Never Say Die." I have listed my play dates below.

Name .....

Theatre

Town

State

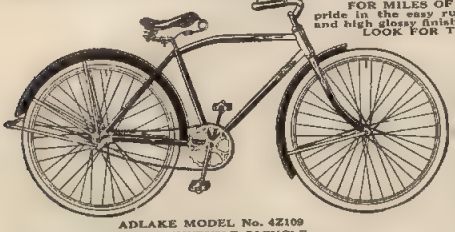
"Never Say Die"

Play Dates

THE CELEBRATED ADLAKE BICYCLES AT FACTORY PRICES

Made and Finished just a little stronger and better than seems necessary. These wonderful bicycles represent excellent values at these low prices. Sturdily constructed, elegantly finished, rich, attractive, classy and prepossessing in appearance. The lasting service one derives greatly exceeds their fondest expectations.

STAND AND REAR REFLECTORS ON ALL MODELS
FOR MILES OF RIDING COMFORT AND JOY Every owner takes genuine pride in the easy running qualities, the low, graceful, well proportioned lines, and high glossy finish of the ADLAKE.
LOOK FOR THE BICYCLE WITH THE GOTHIC WHITE HEAD—IT IS THE STANDARD OF COMPARISON



ADLAKE MODEL No. 4Z109
GIRL'S JUVENILE BICYCLE
Exact reproduction of ladies' model)

It's just like the full size Ladies', only smaller. None better made. Constructed of highest quality materials, expertly constructed and reinforced and made to give utmost satisfaction and lasting service. Listed in the specifications are the highest grade and renowned parts that serve to increase the life and the easy riding of this model.

Specifications:

Size to fit Girls from 5 years to 12 years of age. 17-inch Frame. 26-inch Wheels. Special Built Saddle. Fisk Tires. New Departure or Morrow Coaster Brake. Chain Guards. Skirt Guard. Drop Side Fenders. Rubber Pedals. Bull Dog Long Leather Grips. Stand and Rear Reflector. Maroon with White Head, or Blue with White Head.

No. 4Z109M Girls' Juvenile Bicycle, Maroon with Gothic White Head, each **$65.00**

No. 4Z109B Girls' Juvenile Bicycle, Blue with Gothic White Head, each **65.00**

MODEL No. 4Z156 SAME AS ABOVE EXCEPT IN LARGER LADIES' SIZE

20-inch Frame. 28-inch Wheels. Otherwise the same as above mod.

No. 4Z156M Ladies' Bicycle, Maroon with White Head, each **$78.00**
No. 4Z156B Ladies' Bicycle, Blue with White Head, each .. **78.00**

ADLAKE PREMIER MODEL No. 4Z154

Truly the Rolls Royce in Motor Bikes. Don't permit our low factory price to mislead you regarding the high quality, expert construction, and attractive appearance of this superior men's Motor Bike. Built of selected high grade materials, guaranteed to give wonderful service, easy, enjoyable and most satisfactory in riding. You may pay more for a similar style bicycle, expecting a higher quality, but no better material made enters into the construction of this number. Unquestionably elegant value at this low factory price.

Specifications:

Motor Bike Regular Built Frame. 28-inch Wheels. New Departure or Morrow Coaster Brake. No. 10 Elkhorn or No 12 Box Handle Bar. Fisk Tires. Special Saddle, Motor-Bike Pattern. Drop Side Fenders. Rubber Large Motor Pedals. Bull Dog Long Leather Grips. Stand and Rear Reflector. Finished in Maroon with Gothic White Head and Blue with Gothic White Head.

No. 4Z154MW Maroon with Gothic White Head, each **$75.40**
No. 4Z154BW Blue with Gothic White Head each. **75.40**

ADLAKE MODEL No. 4Z105
THE HIGHEST GRADE JUVENILE BOY'S BICYCLE MADE

Constructed of selected high grade materials, such as the specifications will reveal. Will give utmost satisfactory service, and at our low factory price represents wonderful intrinsic value.

Specifications:

A Drop Frame Juvenile 16-inch Frame 26-inch Wheels. Fisk Tires. Maroon with Gothic White Head, or Blue with Gothic White Head. New Departure or Morrow Coaster Brake. Drop Side Fenders. Rubber Pedals. Spring Saddle. Bull Dog Long Leather Grips. Stand and Rear Reflector. Being Made Drop Top Bar will fit boys 5 to 12 years of age.

Just the thing for the Little Fellow—Nothing surpasses this in high qualities, expert workmanship and finish and lasting service.

No. 4Z105M Maroon with Gothic White Head, each **$65.00**
No. 4Z105B Blue with Gothic White Head, each **65.00**

ADLAKE PREMIER MODEL No. 4Z110B
YOUTH'S MODEL CAMEL BACK BRACED FORK
"THE BOY CANNOT OUTGROW IT"

The Peer of all Bicycles at this low price. Expertly constructed of selected materials, designed throughout primarily to serve the youth, this celebrated number has embodied in its construction, Strength, Service, Speed and Class.

Specifications:

Camel Back 18-inch Frame. 28-inch wheels. New Departure or Morrow Coaster Brake. No. 10 Elkhorn or No. 12 Box Handle Bar. Fisk Tires, 3M. Motor-Bike Saddle, Drop Side Fenders. Rubber Motor Type Pedals. Bull Dog Long Leather Grips. Stand and Rear Reflector. Choice of Maroon with Gothic White Head, or Blue with Gothic White Head. Attractive and classy looking and will cause your boy to smile with delight upon the comments and admiration expressed by his chums. Impossible to make anything superior at this low factory price.

No. 4Z110BM Youth's Camel Back Bicycle, Maroon with Gothic White Head, each **$72.80**

No. 4Z110BB Youth's Camel Back Bicycle, Blue with Gothic White Head, each. .. **72.80**

ADLAKE PREMIER MODEL No. 4Z146
REGULAR DIAMOND FRAME IN MEN'S MODEL

A Real Man's Bicycle. A Bicycle that is built only of selected highest grade materials, nicely finished, very attractive and of superior class.

Specifications:

Regular 21-inch Diamond Frame. 28-inch Wheels. New Departure or Morrow Coaster Brake. No 10 Elkhorn or No 12 Box Handle Bar. Highest Quality Fisk Tires, 3M. Saddle of Motor-Bike Pattern. Drop Side Fenders. Rubber Motor Pedals. Bull Dog Long Leather Grips. Stand and Rear Reflector. Finished in Maroon with Gothic White Head or Blue with Gothic White Head.

No. 4Z146MW Maroon with Gothic White Head, each..... **$70.20**
No. 4Z146BW Blue with Gothic White Head, each..... **70.20**

ADLAKE MODEL No. 4Z143—ROAD RACER (NOT SHOWN)

This Bicycle weighs 25 lbs. It is not a track racer. It has 1¼-inch Fisk Tires, and is built much stronger. It has racy lines and rides easy, and will outlast the average Bicycle. Stripped of mudguards, and furnished with handle bars down. If coaster brake is required, same can be had at an additional cost. Comes in black and nickel forks.

No. 4Z143 Road Racer Model, as described above, each..... **$67.80**

AERMORE EXHAUST HORNS

The Aermore Exhaust Horn is built on the pipe-organ principle. It has four tubes of various lengths, each producing a beautiful note; and when sounded in unison they give a rich, harmonious chord. Its tones are mellow and resonantly chimelike—clear and penetrating and can be heard a long distance—yet do not startle or anger the pedestrian. It has been called the signal with the smile because its tone, although securing instant attention, is cheering and agreeable at all times. It can be attached to the exhaust pipe of practically any car, truck or tractor, between the engine and muffler by means of a valve which is operated either by a foot pedal or by hand-pull rod. Does not become clogged —has no removable parts to wear or get out of order—and is constructed of brass and steel, heavily nickel plated, with malleable iron fittings. Its installation is simple—it occupies out of the way space—the best of all, its first cost is its last cost—there is no upkeep expense whatsoever.

‡**No. 00**—21-inch; Aermore Motor Bus Special complete with hand control. This horn is especially designed for heavy trucks and other high powered motors, gives a very deep tone. Weight, each, 6 lbs. Each.....$14.00

‡**No. 0**—17-inch; Aermore outfit complete with hand control. This horn is especially designed for large cars, trucks and tractors, gives a deep rich chord. Weight, each, 4¾ pounds. Each.....$12.00

‡**No. 1**—15-inch; Aermore outfit complete with hand control. Is recommended for medium weight cars and light tractors. Can be used on Fords if an especially deep tone is desired. Weight, each, 3⅝ lbs. Each 10.00

‡**Ford Special Outfit**—Including Aermore (Ford size) valve, elbow, etc., and hand control, all in one container. Weight, each, 3 lbs. Each..... 7.00

Note—When ordering always give size of valve desired (outside diameter of exhaust pipe) or name and model of car, truck or tractor to which it is to be attached.

Every Aermore is tested before shipped. Its tone, material and workmanship are guaranteed. If, for any reason, the horn does not work satisfactory, return to factory and fault will be corrected, free of charge.

SELF-CLOSING VALVES

The most satisfactory attachment for Aermore horns. This valve is made of the best malleable iron, each one carefully machined and equipped with two cup-point set screws. The operating lever can be set at any angle desired and the spring closes the opening into the horn when the signal is not desired. Built in sizes from 1½ to 4¼ inches.

1½ to 3 inches inclusive. Each.....$1.80
3½ to 4¼ inches inclusive. Each..... 3.50

GOGGLES AND GLOVES

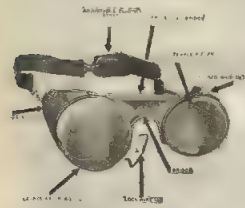
Aluminum cups, ventilated, leather center to fold, lined with leather and edged with chenille, clear glasses. No. 10—Weight, per dozen, about 1¼ pounds. Per dozen $10.00

Albex eye protector made with solid white metal frame, soft cable riding bow temples, stiff arch bridge (which will allow sufficient adjusting for a wide or narrow nose), and well ventilated leather side guards. Glazed with amber, smoke and clear micoquille lenses 1⅞ inches in diameter. Light and comfortable and much used by automobilists and others for every purpose where eye protection is desired.

No. A1—Weight, per dozen, about 2 pounds. Per dozen $12.00

One pair in a case, one dozen pairs in a box.

RESISTAL EYETECTS



Resistal Eyetects are the only goggle having the genuine non-shatterable resistal glass; they cannot and will not shatter.

Strong metal frame, full nickel-plated. Hinged bows. The elastic strap is adjustable and is light, comfortable, snug fitting and very durable.

Should be worn in all hazardous occupations. Resistal affords absolute protection to the eyes, and will not destroy, reduce, distort or impair the vision in any way.

No. 28—One pair in oval container. Weight, 3 ounces. Per dozen $36.00

INSULA WELDS EYETECTS

The safe goggle for welders. Absolute comfort and protection. Adjustable elastic head strap and nose bridge. No screws, wires or metal used. Made of finest grade black fibre.

Lenses can instantly and easily be removed and replaced while goggles are in use by the removing of the lens cap. The lenses cannot come out, loosen or rattle, while the goggle is in use.

The Welda lens is protected by a cover lens of clear glass, which protects the Welda lens from flying sparks and hot metal. All glare is removed and comfortable vision is possible with the Welda lens.

Insula Welda Eyetects—One pair in a box. Weight, 2 ounces. Per dozen $36.00

SAVE-A-SLEEVE GLOVES

For Automobile Repair Work.

"Save-A-Sleeve" gloves are made of heavy, durable duck, double seamed for stiffness — impervious to oil and dirt. The gloves are extra heavy sewed, the seams of the shoulder—length gauntlet are stay-seamed. This makes the sleeve of the glove stay in place and hold to the arm, making sure that the arms and sleeves of shirt or coat are protected. Gloves are full cut throughout—comfortable—protects hands and full sleeve.

"Save-A-Sleeve" Gloves—Extreme length 24 inches; weight, per dozen pairs, about 5 pounds. Per dozen pairs $17.00

Packed one dozen pairs in a box.

ICE SKATES

2442A

ALFRED JOHNSON

The Manufactures of Alfred Johnson Skates have had over 20 years active and practical experience in the making of tubular skates. The operation is under the personal supervision of Mr. Alfred Johnson and others with years of expereience in making tubular skates and not left to inexperienced workmen.

Alfred Johnson Skates are high grade, because the manufactures have their own steel, specially prepared for them, after their own analysis, and exercise all their experience, skill, ingenuity and watchfulness in order that the skates are properly assembled by their expert mechanics who have made tubular skate making a life study.

Tempering—Years of experience in tempering steel has taught them exactly the analysis and the furnace manipulation that will produce the strongest and toughest steel

Skate Making—To manufacture a tubular skate which requires light material and still retain sufficient strength to withstand the severe usage, they use their own specially prepared high grade tool steel for their runners, which are carefully tempered, highly polished, riveted and soldered, which is very important and one of the most essential features of their skates.

Professional Model—The essential features of the racing skates, which are used for pleasure as well as racing, are lightness, stiffness and a runner made of specially prepared high grade carbon steel, carefully tempered and made specially hard to hold a keen edge, which, combined with skilled workmanship and the best of materials obtainable, produces a tubular skate that have no equal.

Sole Plates—Other makes that are riveted and fastened on top of the cups, will crack along the edge of the cup and rivets will loosen up while Alfred Johnson sole plates are secured to the cups with their patented joint, giving a solid bearing all around the cup. By having the sole fastened under the flange of the cup and the shoe resting on top of the flange of the cup, it gives the sole plate double strength.

Cups—Cups have a wider bearing around the tube, giving the cup a stronger holding power on the tube. They are made out of one piece tinned steel, being rolled to shape and joined with a lock seam which is soldered to make a light and strong cup.

Shoes—Years of practical experience in the shoe making line has enabled the manufactures of Alfred Johnson skates to produce a last which insures a perfect fit and in selecting the highest grade of leather and the assistance of expert shoe makers, they present to the skating public a shoe of the highest quality. Their shoes are reinforced with webbing stitched to the uppers to prevent the shoe from stretching. Upper leather is oiled tan Lizarine leather, which is soft, pliable and durable and for a skating shoe is the best leather obtainable. The counters are of genuine oak sole leather, sewed on the outside, which gives the foot a perfect fit and insures protection to the foot and shoe. The long counters act as an arch support.

Comparison—The difference between good skates and inferior ones is wholly a matter of selecting good steel and applying expert workmanship which makes the famous Alfred Johnson product. All tubular skates are practically alike in appearance, but not in quality. When you put the counters on the inside of the shoe, you are not able to use such heavy leather. Counters on the inside of the shoe can be made of almost any kind of material, not necessarily leather, and the grade of material cannot be detected.

MEN'S HOCKEY

Aluminum Finish.

No. 100—Size, shoes 4 to 11.

Per pair, with shoes, all sizes.....$11.00

Nickel Finish.

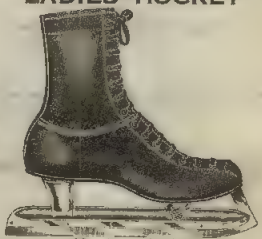
Nickel plated finish skate, otherwise same as above.

No. 200—Size, shoes 4 to 11.

Per pair, with shoes, all sizes.....$13.50

Average weight, per pair, 4 pounds.

LADIES' HOCKEY



Aluminum Finish.

No. 300—Size, shoes 2 to 8.

Per pair, with shoes, all sizes.....$11.00

Nickel Finish.

Nickel plated finish skate, otherwise same as above.

No. 400—Size, shoes 2 to 8.

Per pair, with shoes, all sizes.....$13.50

Average weight, per pair, 3 pounds.

One pair in a box.

Note—Shoes are not made in ½ sizes as there is a difference of only ⅝ inch in length between sizes.

Length of skates depends on size of shoe.

When ordering be sure to specify whether Alfred Johnson or Nestor Johnson skates are wanted.

2442B

ICE SKATES

ALFRED JOHNSON

MEN'S RACING

Aluminum Finish.

No. 500—Size, shoes 4 to 11.
Length skate, 15 inches.
Per pair, with shoes, all sizes.....$11.00

Nickel Finish.

Nickel plated finish skate, otherwise same as above.
No. 600—Size, shoes 4 to 11.
Per pair, with shoes, all sizes.....$13.50

Average weight, per pair, 4 pounds.

LADIES' RACING

Aluminum Finish.

No. 700—Size, shoes 2 to 8.
Length skate, 14 inches.
Per pair, with shoes, all sizes.....$11.00

Nickel Finish.

Nickel plated finish skate, otherwise same as above.
No. 800—Size, shoes 2 to 8.
Per pair, with shoes, all sizes.....$13.50

Average weight, per pair, 2¾ pounds.

One pair in a box.

Note—Shoes are not made in ½ sizes as there is a difference of only ⅝ inch in length between sizes. Length of skates depends on size of shoe.

When ordering be sure to specify whether Alfred Johnson or Nestor Johnson skates are wanted.

Allwon.

Two colors in one-piece lens. A real necessity when properly explained.

Allwon lenses are now a recognized part of every complete line of goggles. The public understand now that a lens should be dark enough for brightest lights to give real protection against the sun, and yet it must be light enough to wear when bright light conditions do not exist. All recent developments of colored optical glass have had for an object the discovery of a glass that would protect against all strong light, and yet be suited for ordinary use.

No. 746—Medium size Nuform; heavy frame, well polished; weight of display, 2¼ pounds. Per dozen $13.20

No. 75050—Large size Overall; heavy frame, well polished; made to fit over glasses; weight of display, 2½ pounds. Per dozen 18.00

Nosquint

Squinting is caused by too much light—not necessarily too strong, but coming from too wide an angle solidly into the eye. The natural tendency is to half-close the eyes.

The Nosquint shuts out all light from the outer circle of vision and tones down the light that is excessive.

No. 046—Medium size; amber lens; heavy frame, well polished; weight of display, 2¾ pounds. Per dozen $12.00

Ventiflex

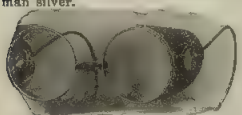
Cool and comfortable—the goggle with perfect ventilation.

The shields are of selected calfskin, in which are set the wire screen vents. These provide not only sufficient ventilation, but a reasonable field of side vision as well. They allow free passage of air, while preventing entrance of dust, making the goggle both cool and comfortable.

The lenses can be removed by means of a wire which is easily operated. They are large size—1⅞ inches in diameter.

The bridge is formed of a flexible, adjustable leather thong, which is neat, comfortable, and practical. Can be adjusted to any size.

The rims are made of highly polished nickel plated German silver.



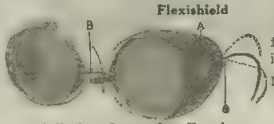
The temples are of wire, covered with shell Zylo and so attached to the metal of the vents as to provide a joint adjustable to any angle. This permits the lenses to be brought in to the cheek or out to the eyebrows and to bring shields close to the face at the sides or outward to the side of the face of a large wearer. The temples are Zylonite, giving perfect comfort.

No screws to work loose—no solders—will last forever.

No. 1504—Large size; amber lenses; Zylowire temple ventiflex; weight of display, 3 pounds. Per dozen $10.40

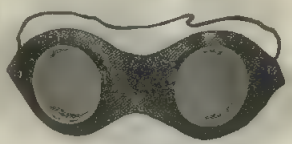
No. 1506—Large size; amber lenses; elastic headband ventiflex; weight of display, 2¾ pounds. Per dozen 12.00

Flexishield



Fit and comfort sure because it is adjustable.

No. 464 — Medium size; amber lens; weight of display, 3 pounds. Per dozen $15.00



No. 5—Metal cups, ventilated; 2-inch round clear glasses, leather shield with elastic cord. Weight, per dozen, about ¾ pound. Per dozen $1.70

Three dozen in a box.

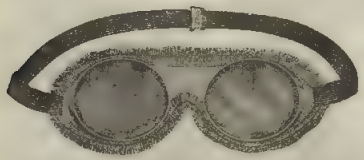
No. 40—Aluminum cups, set in leather shield, clear glasses, elastic cord. Weight, per dozen, about 1 pound. Per dozen $3.80

Three dozen in a box.

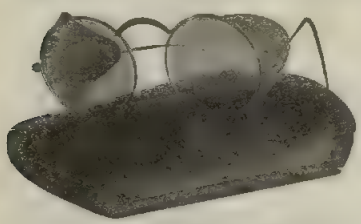
No. 35—Everwear, pure red rubber frame, ventilated, one set clear glasses. Per dozen $7.50

One set in a box.

GOGGLES AND GLOVES



Aluminum cups, ventilated, leather center to fold, lined with leather and edged with chenille, clear glasses. No. 10—Weight, per dozen, about 1¼ pounds. Per dozen $10.00

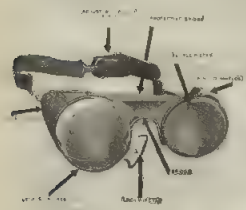


Albex eye protector made with solid white metal frame, soft cable riding bow temples, stiff arch bridge (which will allow sufficient adjusting for a wide or narrow nose), and well ventilated leather side guards. Glazed with amber, smoke and clear micoquille lenses 1⅞ inches in diameter. Light and comfortable and much used by automobilists and others for every purpose where eye protection is desired.

No. A1—Weight, per dozen, about 2 pounds. Per dozen $12.00

One pair in a case, one dozen pairs in a box.

RESISTAL EYETECTS



Resistal Eyetects are the only goggle having the genuine non-shatterable resistal glass; they cannot and will not shatter.

Strong metal frame, full nickel-plated. Hinged bows. The elastic strap is adjustable and is light, comfortable, snug fitting and very durable.

Should be worn in all hazardous occupations. Resistal affords absolute protection to the eyes, and will not destroy, reduce, distort or impair the vision in any way.

No. 28—One pair in oval container. Weight, 3 ounces. Per dozen..... $36.00

INSULA WELDS EYETECTS

The safe goggle for welders. Absolute comfort and protection. Adjustable elastic head strap and nose bridge. No screws, wires or metal used. Made of finest grade black fibre.

Lenses can instantly and easily be removed and replaced while goggles are in use by the removing of the lens cap. The lenses cannot come out, loosen or rattle, while the goggle is in use.

The Welda lens is protected by a cover lens of clear glass, which protects the Welda lens from flying sparks and hot metal. All glare is removed and comfortable vision is possible with the Welda lens.

Insula Welda Eyetects—One pair in a box. Weight, 2 ounces. Per dozen..... $36.00

SAVE-A-SLEEVE GLOVES

For Automobile Repair Work.

"Save-A-Sleeve" gloves are made of heavy, durable duck, double seamed for stiffness — impervious to oil and dirt. The gloves are extra heavy sewed, the seams of the shoulder—length gauntlet are stay-seamed. This makes the sleeve of the glove stay in place and hold to the arm, making sure that the arms and sleeves of shirt or coat are protected. Gloves are full cut throughout—comfortable—protects hands and full sleeve.

"Save-A-Sleeve" Gloves—Extreme length 24 inches; weight, per dozen pairs, about 5 pounds. Per dozen pairs..... $17.00

Packed one dozen pairs in a box.

MOLLY STARK
PLATINUM FINISH

THE following illustrations show our "Long Life" Quality Plate which will satisfy the most particular customer. It is produced with the same care, skill and attention to details as sterling silver. Each piece is heavily plated with a uniform weight and thickness of pure silver to resist the hardest wear and insure the longest life.

8 o'clock Tea,	Six packed in lined box	$6.48 per doz.
Tea	" " " "	8.18 "
Dessert	" " " "	17.76 "
Table	" " " "	18.36 "
Serving	" " " "	18.36 "
Dessert Fork, Steel	" " " "	13.76 "
Dessert Fork	" " " "	17.76 "
Dinner Fork	" " " "	18.36 "
Dessert Knife, HH, Steel	" " box, Stag bone blades	29.02 "
Dessert Knife, HH,	" " " "	30.65 "
Dinner Knife, HH,	" " " "	41.30 "
Medium Knife, Set of 11	" " " "	17.04 "

Set of 6 knives and 6 forks in lined box
Dessert Size $24.84
Dinner Size 35.44
Dessert size with solid handle knife 19.44

ALVIN PATENT

AMERICAN STEEL & WIRE CO.

SALES OFFICES

CHICAGO. . . . . 208 So. La Salle Street
NEW YORK . . . . . 30 Church Street
WORCESTER. . . . . 94 Grove Street
BOSTON . . . . . 185 Franklin Street
PHILADELPHIA. . . . . Widener Building
PITTSBURGH . . . . . Frick Building
BUFFALO . . . . . 670 Ellicott Street
DETROIT . . . . . Foot of First Street
CINCINNATI . . . . . Union Trust Building
CLEVELAND. . . . . Rockefeller Building
MEMPHIS . . Union & Planters Bank Building

BALTIMORE . . . . . 32 So. Charles Street
WILKES-BARRE, PA . . Miners Bank Building
ST. LOUIS. Liberty Central Trust Company Bldg.
DALLAS. . . . . Praetorian Bldg.
KANSAS CITY. . . . . 417 Grand Avenue
ST. PAUL-MINNEAPOLIS. Pioneer Bldg., St. Paul
OKLAHOMA CITY . 1st National Bank Building
BIRMINGHAM, ALA . . Brown-Marx Building
DENVER . . 1st National Bank Building
SALT LAKE CITY . . Walker Bank Building

Export Representatives: U. S. Steel Products Co., New York
Pacific Coast Representative: U. S. Steel Products Company
San Francisco Los Angeles Portland Seattle

ARCWELD RAIL BONDS

Arcweld Rail Bonds

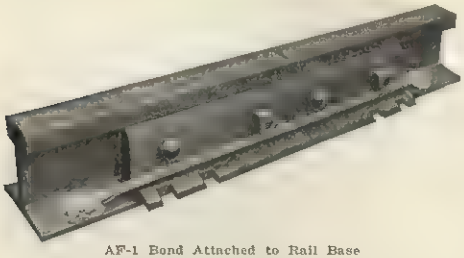
Have a direct weld between the copper and the steel terminal which is welded to the rail. Welding cannot disturb the connection between the copper and the steel terminal as is often the case in other bonds which have the terminals brazed or soldered to the copper.

Welded bonds give permanency of contact. No special equipment is needed with which to shape the bond or apply it to any part of the rail. No molds are required and clamps are not necessary.

Attachment to the rails with steel imparts great mechanical strength and discourages theft of bonds.

Any form of arc-welding apparatus may be used. This is of great advantage where there may be different kinds of apparatus, thus removing the necessity of transporting special apparatus to every place where repairs are needed.

All Arcweld Bonds have a contact area equal to approximately six times the nominal capacity of the bond.



AF-1 Bond Attached to Rail Base

AF-1 (Long Terminal) Stranded

AF-2 (Long Terminal) Stranded

Designed for application around the splice bar. Usually welded to the rail web.

AA-1 T-Head Terminal

AB-1 L-Head Terminal

These Bonds are designed for application to head of rail.

Types illustrated are single strand. Double strand types AA-2 and AB-2 are highly recommended.

The AA-1 and AA-2 types are used where joint bolts are spaced 5″ or more apart.

The AB-1 and AB-2 where joint bolts are spaced less than 5″ apart.

Arcweld Rail Bonds—Type SMF

These bonds are intended for application by arc welding, using a copper electrode. Terminals consist of a bottomless steel box or mold to retain the molten copper.

Type SMF Bond Attached to Rail Base

Type SMF Arcweld Rail Bond

In the welding operation the connecting strand which enters the mold at one end is melted down and becomes part of the copper terminal that is directly welded to the rail. This bond is a decided improvement over types carrying a steel terminal because one welding operation is eliminated. They have a very large contact area, and once applied are of very high conductivity and practically permanent.

The bonds are low in price, easily applied, using any of the standard arc welding machines, in connection with a special analysis copper welding rod developed by this Company for their application.

The Electric Railway Improvement Co.

CLEVELAND, OHIO

Represented by

PITTSBURGH ..Pharo Engineering Co., Park Bldg
CHICAGO D. G. James, 382 No. Michigan Ave.
BIRMINGHAM General Mchy. Co., Brown-Marx Bldg
MORGANTOWN, W. VA
DENVER O. H. Davidson Equip. Co., 1633 Tremont St.
BECKLEY, W. VA .. Beckley Machine & Electric Co.
LOGAN, W. VA .. Miller Hardware & Supply Co.
Monongahela Supply Co

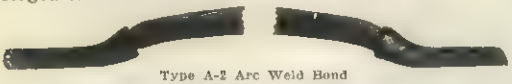
Products

Arc Weld Rail Bonds.
Portable Arc Welding Outfits.
Arc Welding Rod.
Arc Cutting Carbons.
Welding Shields, Hoods, Pencil Holders and Flexible Welding Cable.

Arc Weld Rail Bonds

The copper conductors of ERICO Arc Weld Bonds are thoroughly welded to the heavy forged iron terminals, insuring a permanent connection of the highest electrical conductivity.

The ends of the cable of Type A-2 bond are entirely enclosed by thick iron sleeves, forged to a good welding shape and extended along the cable in a protecting and supporting sleeve. Type ATF-2 has heavy drop forged terminals.



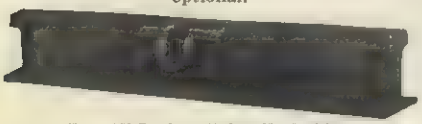
Type A-2 Arc Weld Bond

Type A-2 Bond Applied

See tables on right for lengths. Capacities 2/0, 3/0, 4/0, 250,000, 300,000, 350,000 and 400,000 C.M.

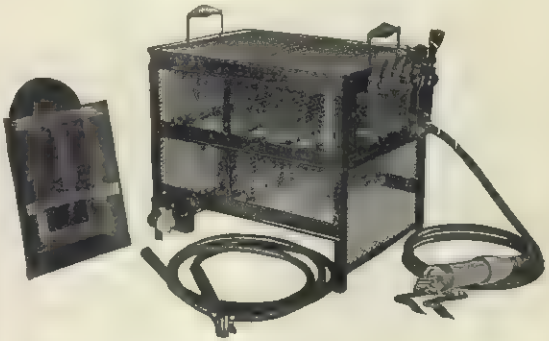
Type ATF-2 Bond Applied to Head of Rail

Twin cable bond for head of rail, 50 lb. to yard or more. Recommended for heavy main haulage rails. Furnished only in 4/0 capacity. Single cable optional.



Type AU Bond Applied to Head of Rail

Ribbon type of bond for head of rail. Also used under the base of rail. 2/0 or 4/0 capacity.



Arc Welding Outfits

The ERICO 250 Volt-200 Ampere Outfit weighs only 50 lbs. complete. It is easily operated and handled by one man. The 400-600 Volt-200 Ampere Outfit weighs only 145 lbs. These outfits will do any arc weld repairing as well as rail bonding.

A-2 BOND AROUND JOINTS

Rail Weight Lbs. Per Yard	Fish Plate Length	Length A-2 or A Bonds
12 to 35	16½	24
40 to 45	20	28
50 to 60	24	32

For bond length around fish plates other than sizes given, add 8" to fish plate length. **Always state type, length and capacity when ordering.**

CROSS BOND LENGTHS

Track Gauge, Inches	A-2 Bond	ATF-2 Bond*
36	48	46
40	52	50
42	54	52
44	56	54
48	60	58

*ATF-2 Cross Bonds furnished in 4/0 capacity only.

Type ATF-2 Cross Bond

Arc Welding Rod

No. 4—For Bonding and General Welding.
Furnished in ⅛", 5/32" and 3/16" diameters.
Order ¼ lb. per bond for bonding.

No. 1—For Repairing Cast Iron.
Furnished in ⅛" and 5/32" diameters.

No. 11—High Carbon rod for repairing frogs, worn rails, building up tires, etc., where hard tough surface is desired.
Furnished in 5/32", 3/16" and ¼" diameters.

AMERICAN ATMOS CORPORATION

Main Sales Office: 105 W. 40th St., NEW YORK

Factory: Wilkinsburg Station, Pittsburgh, Pa.

Chicago Office: Federal Life Building Seattle Office: 2012 L. C. Smith Building

Mine Rescue Apparatus, Rescue Station Accessories, Pulmotors, Oxygen Inhalators, Oxygen Pumps, Gas Masks

The Paul Breathing Apparatus

Inventor: Mr. James W. Paul, Chief Coal Mining Engineer, U. S. Bureau of Mines, seven years in charge of the mine rescue work of that bureau.

Principle of Operation: Oxygen is controlled automatically. It is fed to the breathing bag by a simple valve mechanism in accordance with the respiratory requirements of the wearer. In this way no oxygen is wasted although an ample amount of cool fresh air is available for even the most strenuous work. Absorption of carbon dioxide from respiration is exceedingly perfect and the air cooling system very efficient.

Approvals: The Paul Apparatus is the first mine rescue apparatus to receive the official approval of the governments of both the United States and Great Britain.

Positive Pressure: It is the only apparatus constructed on this principle so strongly recommended by the U. S. Bureau of Mines. It is no doubt due to this fact that it is the only apparatus ever generally used in which a life has never been lost.

The Paul Breathing Apparatus

Atmos Peerless Apparatus

The Atmos Peerless Apparatus

This new form of small self-contained breathing apparatus combines the elements of safety and simplicity in a maximum degree.

It is useful on one charge for times varying between forty-five minutes and one hour and a half, depending upon the amount of exertion during the working period.

It is suspended in the most out-of-the-way and best protected position on the body—under the left arm.

The elimination of complicated valve mechanisms assures the greatest degree of safety and practically prevents any part getting out of order. It is "foolproof" in every sense of the word.

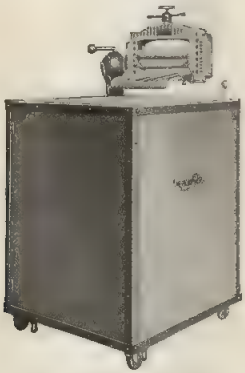
It has a complete circulatory system and is equipped with an efficient cooler.

This apparatus is destined to find a great deal of use on the many occasions when short period work is required in mine fire fighting operations and after explosions.

"AMERICAN BEAUTY" OSCILLATING COPPER TANK ELECTRIC WASHER

A SUPER MECHANICAL ACHIEVEMENT

WASHES SO CLEAN—SO GENTLY SO RAPIDLY



Twelve Minutes from Start to Finish

The American Beauty is the result of eighteen years of successful manufacturing experience and combined efforts to produce an absolutely trouble-proof electric washer for the home. It is a machine of surprisingly few parts and is remarkable for its economical ease of operation, as well as the thoroughness and rapidity with which it does the work. The big feature is the improved method of starting and stopping machine without the slightest jar or jerk by means of a specially designed shift similar to that used on locomotives. All springs and clutches are eliminated.

Operation—Starts by a touch of the switch located at side. Shifting the lever slowly starts the tub in motion which makes fifty strokes about 10 inches each, back and forth every minute. Reversing the lever, stops tub instantly.

All gears are machine cut and operate very quietly. The gears in the gear case bathe in soft oil like the transmission in an automobile. This reduces friction to a minimum, insures lasting service and causes the machine to operate smoothly, quietly and easily.

The American Beauty simply throws the clothes back and forth in the water and churns up millions of soap bubbles that loosen the dirt from the clothes. The action of the machine forces the hot soapy water thru the meshes of the fabric, dissolves the dirt and turns out the clothes a perfect snowy white. It washes the finest silks, laces, crepe de chine, baby clothes as well as linens and heavier garments without the slightest damage.

Frame—Made of 1¼x1¼x⅛ tough angle steel braced like a bridge, making the machine very rigid. It is firmly riveted together and braced from all sides. The lid remains on the machine while in operation and can be used as a table.

Tub—Extra heavy copper tub, tinned inside to avoid discoloration of clothes. It snugly fits in the cradle-like arrangement, doing away with all bolts or rivets commonly used to hold the tub in a frame. It has no ridges, holes or crevices to wear and tear the clothes.

Capacity Eight sheets, seventy-two towels, etc.

Drive—Highest quality, endless "V" Vulco-cord belt forms a direct drive from motor to drive pulley. A special safety arrangement is provided on drive pulley to prevent accidents to machine, also avoid blowing out fuses and burning out motor.

Motor—A standard washing machine motor, ¼ H. P.—50% oversize is used. It is of ample capacity to wash and wring at the same time. Regularly equipped for 110 volts alternating current, but also furnished for all other currents.

Automatic Belt Tightener—The automatic belt tightener permits 1½ inch tightening surface on belts, always furnishes equal tension and eliminates belt troubles entirely. Permits the machine to start gently without strain on motor.

Wringer—Four position swinging wringer with pressure release made of high grade white rubber rolls. Positive lock prevents wringer from getting loose and swinging around to hit the operator or children. It can be operated separately or simultaneously with the machine. Stops, starts and reverses instantly. Rust proof, all metal frame.

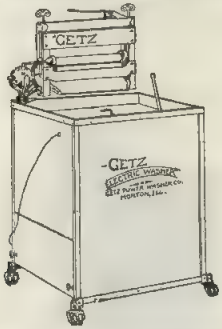
Casters—Large galvanized 2-inch washing machine casters permit easy moving of the machine.

Finish—Beautiful square cabinet with table top. Painted a rich battleship gray enamel applied by the "Aeron" system.

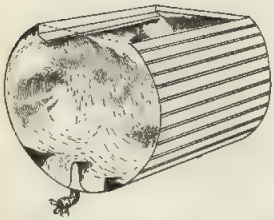
Size—Height of frame 36 inches. Width 26x28 inches.

No. 11 American Beauty Electric Washer, shipping weight, crated, 300 lbs. Each, $217 00

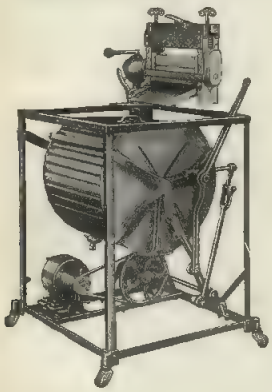
OSCILLATING COPPER TANK ELECTRIC WASHER



Showing Full Cabinet Style of Construction



Showing how the water is forced over, thru and under the clothes getting into every thread and cleaning them thoroughly



Sides removed to show the simple construction; the improved methods of stopping and starting the washer; the most correct principle used on any oscillating washer.

A solid copper tank electric washer built in a cabinet that is easy to operate and to keep in order

The "No. 4" washes all clothes from daintiest baby clothes, finest linens to the heavier garments. It does it just as thoroughly as you could wash them with your own hands. It dips the clothes up and down in the water without rubbing or wear.

Principle—The "No. 4" washes clothes exactly as you would wash them by hand in a bowl. The 52 up and down strokes every minute churns up millions of soap bubbles. No dirt can escape them or withstand the swift cleansing action of the water which the "No. 4" forces thru every thread. It is therefore very simple to understand why it cleanses clothes more rapidly and cleaner, and without wear and tear, than any other washers do. Clothes washed with the "No 4" last three to five times longer than though they were rubbed by hand on a washboard, or washed by the old method. This saving in clothes together with the saving in time and labor make it easy to pay for this washer.

Operation—The exclusive patented, L. L. G. reciprocating shift on the "No. 4" starts the tub in motion without the slightest jerk or jar, also brings it back to center without the use of springs. The tub can be started or stopped instantly.

All parts are machined and carefully fitted The gears in the gear case bathe in soft oil making this an exceptionally quiet and smooth running washer.

Capacity—Six sheet or 8½ pounds of dry clothes

Tub—The extra heavy solid copper tub painted outside, tinned inside to avoid discoloration. It is corrugated to assist in cleaning clothes. There are no bolts or rivets thru tub. It is securely held in a cradle-like arrangement, 20 inches in diameter; 16 inches wide. The deflectors on the inside of the tub are so located, we get easily 50 per cent added agitation.

Frame—All steel. Made of 1x1x⅛ angle steel, riveted and braced like a bridge Galvanized metal sides finished in rich gray enamel. All parts are carefully enclosed making this washer perfectly safe for children.

Drive—Extra durable endless "V" Vulco cord belt runs direct from drive pulley on motor.

Special Safety Control A specially designed control on the main drive pulley breaks the power between the motor and mechanism when a sudden load is thrown on the washer. This avoids blowing the fuse or burning out the motor or breaking gears

Wringer—The four-position swinging wringer enables the operator to wring clothes while washing It is made of high grade white rubber rolls and furnished with pressure safety release Starts, stops or reverses instantly by means of convenient levers. Reversible water-board is adjustable for wringing in or out of the washer or laundry tub

Motor—The motor is well known of standard make. Furnished 50 per cent oversize for washing and wringing at the same time Regularly furnished with 110 volts, 60 cycle, alternating current.

Size—24 inches by 25 inches, and stands 33 inches high.

No. 4—Oscillating Copper Tank Electric Washer, Weight 230 lbs. crated..... Each, $150 00

Introducing the Newest Member of the American Family

Cut 140-V

A moderately priced Visible Gasoline Pump fitted with a special Blackmer rotary pump, with container, in which adjustable overflow does the measuring—made to meet the demand for a CHEAPER pump.

Furnished with either five or ten gallon visible container. Like all American Pumps, Cut 140-V is attractive in appearance, of substantial construction, quick and easy to operate, and at the price, is without an equal in the market.

This pump is of special interest to oil companies looking for moderately priced equipment that is dependable, that gives continuous and satisfactory service, and that is very economical in operation.

Write for full information.

The American Oil Pump & Tank Company

1151 Findlay St. Cincinnati, Ohio

Cut 340-V

American *Visible* Equipment

AMERICAN B♭, TENOR SLIDE TROMBONE

High and Low Pitch

Material of the best, graceful proportions and careful workmanship are the distinguishing features throughout the line. The slide action in this Trombone is perfect, every position in tune, and finish and balance will leave nothing to be desired.

No. 9D3040 Fine quality brass, highly polished, artistically engraved, furnished with water key and silver plated mouthpiece, each $43.85

No. 9D3041 Triple silver plated, sand blast finish, ferrules, water key, mouthpiece and inside of bell burnished, each 55.75

No. 9D3042 Same as No. 9D3041, with inside of bell gold plated, each 60.65

No. 9D3043 Same as No. 9D3041, with engraving water key, mouthpiece and inside of bell gold plated and burnished, each 66.25

American B♭, Tenor Slide Trombone in higher grade. Has a marvelous pure tone and is greatly in use by professionals.

High and Low Pitch

No. 9D1640 Finest quality brass, highly polished, artistically engraved, furnished with music rack, water key, low pitch attachments and silver plated mouthpiece, each $62.90

No. 9D1641 Triple silver plated, sand blast finish, ferrules, water key, engraving, mouthpiece and inside of bell burnished, each 71.85

No. 9D1642 Same as No. 9D1641, with inside of bell gold plated, each 79.70

No. 9D1643 Triple silver plated, sand blast finish, ferrules burnished, also engraving water key, mouthpiece and inside of bell gold plated and burnished, each 85.30

Trombone No. 9D3040 to No. 9D3043

This instrument is the only logical substitute for the French horn. It can take the place of Eb alto in brass band. It is in "F" but by using the "C" crook it makes it an ideal horn for home or church without transposition.

No. 9D3080 Same model as illustration, made of finest quality brass, highly polished, artistically engraved supplied with pearl finger buttons, music rack and silver plated mouthpiece. Built in F, with crooks to Eb, D and C, both high and low pitch, each $73.00

No. 9D3081 Same as No. 9D3080, silver plate and dull finish with finger buttons, valve caps, water keys, mouthpiece engraving and inside of bell burnished each $3.70

No. 9D3082 Same as No. 9D3081, with gold-lined bell, each 100.50

No. 9D3083 Same as No. 9D3081, silver plated sand blast finish with finger buttons, valve caps, water key, mouthpiece engraving and inside of bell gold plated and burnished, each 109.65

No. 9D3080 Mellophone

American Mellophone

In F, Eb, D and C, High and Low Pitch

Made in Chicago

Fifes Nos. 97-98

American Fifes Nos. 9119-9120

FIFES

No. 97	B♭	Rosewood brass ferrules, each	$1.60
No. 98	C	Rosewood brass ferrules, each	1.60
No. 99	B♭	Cocoa, nickel plated ferrules, each	2.30
No. 910	C	Cocoa, nickel plated ferrules, each	2.30
No. 911	B♭	Ebony, nickel plated ferrules each	3.20
No. 912	C	Ebony, nickel plated ferrules, each	3.20

AMERICAN MAKE FIFES

No. 9119 B♭, cocoa wood, long metal ferrules Crosby model, extra quality, each $3.20

No. 9120 C, cocoa wood, long metal ferrule Crosby model, extra quality, each 3.20

AMERICAN MAKE BUGLES

Regulation Bugles Nos. 9170-9172

REGULATION BUGLE

Fine Quality, Large Bore, Fine Material and Workmanship—Key of G with F Slide

No. 9170	Brass, finely polished, high pitch, each	$10.50
No. 9171	Brass, nickel plated, high pitch, each	13.50
No. 9172	Brass, triple silver plated, high pitch, each	17.25
No. 9160	Bugle, same as No. 9170, built in low pitch, each	10.50
No. 9161	Bugle, same as No. 9171, built in low pitch, each	13.50
No. 9162	Bugle, same as No. 9172, built in low pitch, each	17.25

REGULATION B♭ ARTILLERY BUGLE

High Grade, Easy Blowing, Perfect Tuning

No. 9190 Key B♭, regulation artillery brass, polished brass, with extra heavy tinned tube on bell, fitted with mouthpiece, each ..... $ 9.10

No. 9191 Same as No. 9190, nickel plated, each 11.35

No. 9192 Same as No. 9190, triple silver plated, burnished, each 18.65

REGULATION BUGLE CORDS

No. 91	White worsted full length with tassels, each	$3.25
No. 92	Red worsted, full length, with tassels, each	3.25
No. 93	Yellow worsted, full length, with tassels each	3.25
No. 94	Blue worsted throughout with tassels each	3.25
No. 95	Green worsted, full length, with tassels, service mechanic, each	3.25
No. 96	Blue and white worsted, full length with tassels, home guard each	4.50

An Excellent Showing of Violins, Violincellos and Double Basses

Well Made and Elegantly Finished. The Intrinsic Value More than Represented in Each Article.

FULL SIZE VIOLINS

(Prices quoted do not include Bows. Bows quoted on following pages)

No. 97100 Stradivarius model, rich reddish brown color, highly polished, full ebony trimmed. Very good model and full tone of good quality, each $17 00

No. 9604 Stradivarius model, light brown amber varnish, highly polished, good wood ebonized trimmings, inlaid purfling, each 18.10

No 9397 Stradivarius model, light brown slightly shaded, highly polished, inlaid purfling, ebonized trimmings, flat neck peg, each 25.40

No. 97102 Stradivarius model, red brown color, maple back, sides and neck, fine quality varnish, highly polished, ebony trimmed, each 22 60

No 9765 Model Stradivarius, dark red varnish, highly polished, curly maple back, sides and neck, fine grain top, ebony trimmed, careful workmanship, each 33 50

No. 9440 Grand Concert model, full ebony trimmed, high polish, extra fine quality varnish, very highly inlaid scroll model, full ebony trimmed, high polish, each 29.80

No. 97103 Imperial violin, Stradivarius model, rich red color stained to amber, fine quality varnish, very highly finished, ebony trimmed, each 25.40

No. 97104 Imperial violin, Stradivarius model, not brown color stained into amber, ebony trimmed, each 29.00

No. 9471 Amati model, beautiful amber colored varnish, high gloss finish, fine wood throughout, ebony trimmed, each 34.50

No. 9904 Francois Guillmont, Amati model, dark amber color varnish, flamed back and sides, rosewood pegs, each 43 60

No 9462 Stradivarius model, full medium red amber color, high finish, transparent varnish, flamed wood, full ebony trimmed, each 64.60

No. 92054 Stradivarius model, medium amber color, high finish, flamed maple back, sides and neck, best quality ebony trimmings, each 71 60

No. 92056 Stradivarius model, dark amber color, oil varnished, highly polished, curly maple back and sides, finest quality ebony trimmings, each 74.40

No. 91015 Johann Gerad dressed violins, Stradivarius model, reddish brown full varnish, high gloss finish, ebonized fingerboard and tailpiece, rosewood pegs, slight imitation of Oil ..... each 84.20

No. 92058 Grancino model, dark amber color oil varnished, high finish, flamed maple back, sides and neck, best quality ebony trimmings, tailpiece and pegs, ivory string and tailpiece saddles ..... each 85.60

No. 9954 High grade Mittenwald violins, Antonius Stradivarius model of 1715, each 89.80

THREE-QUARTER SIZE VIOLINS

(Prices quoted do not include Bows. Bows quoted on following pages)

No. 972¾ German, amber color, French Flat model, ebonized pegs, ebonized fingerboard and tailpiece, each. $15.00

No. 921¾ Light brown color, shaded, good model and finish, ebonized fingerboard and tailpiece, each 16.55

No. 931¾ Stradivarius model, light amber color, shaded, ebonized fingerboard, etc., each. 18.20

No. 942¾ Red color, good model and finish, ebonized fingerboard and ebony tailpiece, each 21.70

No. 949¾ Brown shaded, fine model, ebony fingerboard and tailpiece, each 23.40

No 962¾ Stradivarius model, medium red color, shaded, highly polished, ebony fingerboard and tailpiece, each 25.20

No. 995¾ Amati model, brown amber color, highly polished full ebony trimmed, each 38.50

No 9301¾ Johann Ferd Pfretzschner, high amber varnish finish, flamed back and sides, full ebony trimmed, each 43.40

No. 9302¾ Johann Ferd Pfretzschner, Amati model, high amber varnish finish, flamed back and sides, ebony trimmed rosewood pegs, each 48.20

HALF SIZE VIOLINS

No. 972½ German, amber color, French Flat model, ebonized pegs, fingerboard and tailpiece, each $15.00

No. 921½ Light brown color shaded, good model and finish, ebonized fingerboard and tailpiece, each 16.55

No. 949½ Brown shaded, fine model, ebony fingerboard and tailpiece, each 23.40

No. 952½ Stradivarius model, amber color, shaded, highly polished, ebony fingerboard and tailpiece, each 25.20

No. 922½ Neuner & Hornsteiner, Mittenwald Bavaria make, Stradivarius model, plain maple back, sides and neck, spruce top, inlaid purfling, ebonized trimmings, light brown varnish 21.00

No 955 Neuner & Hornsteiner Mittenwald Bavaria make, fine model of Stradivarius model, highly figured maple back, sides and neck, spruce top, inlaid purfling ebonized fingerboard, ebony tailpiece and pegs, light brown varnish slightly shaded, each 35.60

No. 995 Amati model brown amber color, highly polished full ebony trimmed each 38.50

VIOLONCELLOS

(Violoncellos Bows are illustrated and quoted on following pages.)

No 9259 Paten head, dark brown inlaid edges, brass plates, each ..... $ 83.20

No. 9319 Peg head, Stradivarius model, red brown, flamed back, sides and neck, full ebony trimmed, each 141.40

No. 912 Peg head, Stradivarius model, red brown, flamed back, sides and neck, full ebony trimmed, superior imitation of "old," adjustable end pin, each 60.90

No. 914 Peg head, inlaid edges, each 63.70

No. 931 Peg head, light red, inlaid edges, each 72.80

No. 932 Peg head, red brown, polished, ebony fingerboard, each 77.00

No. 943 Peg head, light red polished ebony fingerboard and tailpiece, each 98.00

No. 9201 Patent head, red brown, each 64.40

No. 9203 Medium brown, polished, patent head, each 69.30

No. 9240 Patent head, dark brown inlaid edges ebony fingerboard and brass plates each 79.80

No. 9302 German Mittenwald, Stradivarius model, fine red-Italian wood, fine grade of wood throughout, inlaid purfling, red brown varnish polished ebony pegs and tailpiece, adjustable end pin, each 147.00

DOUBLE BASSES

Including a suitable Bow in keeping with each respective instrument

No. 960 Three-quarter size, 3 strings, dark red shaded, polished, good quality, each $126.00

No. 961 Three-quarter size, 4 strings, dark red shaded, polished, good quality, each 135 80

No. 962 Three-quarter size, 4 strings, other wise same as No. 960, each 140.00

No. 963 Three-quarter size, 4 strings, other wise same as No. 960, each 149.80

No. 965 Full size, 3 strings, dark red shaded, polished, inlaid edges, swelled back, fine quality, each 205.80

No. 967 Full size, 4 strings, dark red shaded, polished, inlaid edges, reinforced sides, fine quality, each 205.80

No. 969 Full size, 4 strings, dark red, shaded, polished, inlaid edges, swelled back, brass patent heads, fine quality, each 222 60

No. 973 Three-quarter size, 4 strings, dark red, shaded, polished ebony fingerboard, each 183.40

No. 974 Three-quarter size, 4 strings, dark red, shaded polished, round edges, fine quality, ebony fingerboard each $218.40

No. 976 Full size, 4 strings, dark brown amber, stained, inlaid edges, swelled back, reinforced sides, brass patent heads, best ebony fingerboard, excellent quality, each 382.70

FINEST AMERICAN DINNERWARE

So Marvelously Similar to Highest Grade Imported China that it Requires an Expert to Distinguish the Difference.

We used the finest of imported clay in the manufacture of our dinnerware, giving the remarkable high grade finish and glaze of the genuine imported China. Guaranteed not to craze. All decorations are carefully executed and thoroughly baked, assuring fine rich colorings. All pieces are first selection, no imperfect pieces in our stock. All of this Beautiful Chinaware is manufactured in one of the largest representative potteries in the United States, and is fully guaranteed.

PRICES QUOTED ARE FOR 50 and 100 PIECE DINNER SETS.

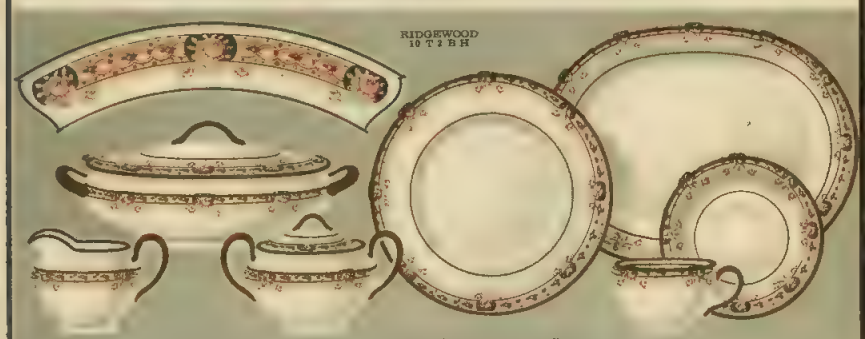
50 Pc. Dinner Set contains

6—9½" Dinner Plates
6—6½" Pie Plates
6—7½" Coupe Soups
1—9½" Oblong Olive Dish
6—Handle Tea Cups
6—6½" Oatmeals
1—11½" Platter
1—Covered Sugar (2 pcs.)
1—Covered Vegetable Dish (2 pcs.)
6—Saucers to match
6—5½" Desserts
1—7½" Salad
1—Creamer

100 Pc. Dinner Set contains

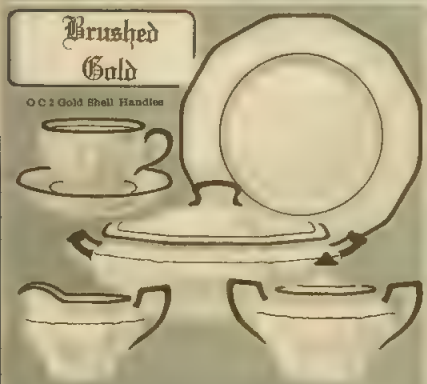
12—9½" Plates
12—7½" Plates
12—6½" Plates
12—7½" Coupe Soups
12—Handle Tea Cups
12—Tea Saucers
12—5½" Fruits
1—7" Covered Dish (2 pcs.)
1—Covered Sugar (2 pcs.)
1—Creamer
1—Sauce Boat
1—Fancy Pickle
1—8½" Baker
1—7½" Salad
1—Covered Butter (3 pcs.)
1—10½ Bowl
1—10½" Platter
1—13½" Platter
1—8½" Cake Tray

Furnished in two shapes—The Colonial of octagonal design and the Thelma—perfectly round



RIDGEWOOD Pattern No. 10 T 2 Burnished Gold half mat handles.
Our selection from all the very latest decorations, because of its daintiness and beautiful blending of harmonious colors. The decoration completely encircles each piece and each handle is finished with a shell of pure burnished gold.

		List
No. 10-T2-B H. 100	100 pc. set	$62.00
No. 10-T2-B. H. 50	50 pc. set	$32.20



BRUSHED GOLD No. OC 2 Gold Shell Handles.
On the Colonial Shape is one of the most popular, medium priced patterns of the day. The pure white china finished with gold shell handles is always in harmony with the surroundings whether it be in the mansion or in the cottage.

Colonial shape (as illustrated)

		Cost	List
No. OC 2 G H 100	100 pc. set	$35 44	$46.40
No. OC 2 G H 50	50 pc. set	$ 7 85	$23 80
The ma shape Perfectly round			
NO. O T G H 100	100 pc. set		$46.80
NO. O T G. H. 50	50 pc. set		$23.80

NORMANDY Pattern No 13 C 2 3 is a semi-border decoration on the Colonial shape. It is a beautiful combination of colors and embellished with coin gold and enamel color lines and tracings

Colonial Shape (as illustrated)

		List
No. 13 C 2 3 100	100 pc. Set	$47 90
No. 13 C 2 3 50	50 pc. Set	$23.10
Thelma shape Perfectly round		
No. 13 T 2 3 100	100 pc. Set	$47.90
No. 13 T 2 3 50	50 pc. Set	$23.10

FINEST AMERICAN DINNERWARE

So Marvelously Similar to Highest Grade Imported China that it Requires an Expert to Distinguish the Difference.

We used the finest of imported clay in the manufacture of our dinnerware, giving the remarkable high grade finish and glaze of the genuine imported China. Guaranteed not to craze. All decorations are carefully executed and thoroughly baked, assuring fine rich colorings. All pieces are first selection, no imperfect pieces in our stock. All of this Beautiful Chinaware is manufactured in one of the largest representative potteries in the United States, and is fully guaranteed.

PRICES QUOTED ARE FOR 50 and 100 PIECE DINNER SETS.

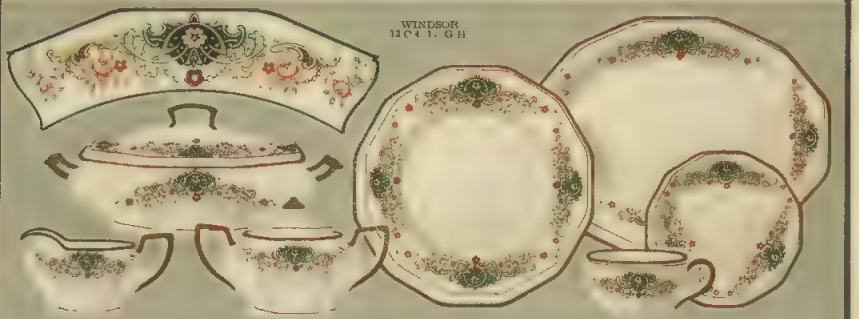
50 Pc. Dinner Set contains

6—9¼" Dinner Plates
6—6¾" Pie Plates
6—7½" Coupe Soups
1—5¾" Oblong Olive Dish
6—Handle Tea Cups
6—6¾" Oatmeals
1—11¾" Platter
1—Covered Sugar (2 pcs.)
1—Covered Vegetable Dish (2 pcs.)
6—Saucers to match
6—5½" Desserts
1—7¾" Salad
1 Creamer

100 Pc. Dinner Set contains

12—9¼" Plates
12—7¾" Plates
12—6¾" Plates
12—7½" Coupe Soups
12—Handle Tea Cups
12—Tea Saucers
12 5¼" Fruits
1—7" Covered Dish (2 pcs.)
1—Covered Sugar (2 pcs.)
1—Creamer
1—Sauce Boat
1—Fancy Pickle
1—8½" Baker
1 7½" Salad
1—Covered Butter (3 pcs.)
1—10a Bowl
1—10¾" Platter
1—13½" Platter
1—8¼" Cake Tray

Furnished in two shapes—The Colonial of octagonal design and the Thelma perfectly round.



WINDSOR
33 C 4 1. G H

WINDSOR Pattern No. 33 C-4-11 Coin Gold Shell handles.
This pattern was especially designed for our Colonial shape by one of the foremost Ceramic artists. This is a semi-border pattern and is a combination of colors that is admired by all who have seen it. The handles are finished with a bright gold shell and each and every piece is embellished with coin gold and enamel color lines and tracings.

			List
No. 33 C-4-11 G. H.	100	100 pc. set	$51.30
No 33 C-4-11 G. H.	50	50 pc set	$26.90

GENEVA
27 T B 2

GENEVA Pattern No. 27 T B 2
On Thelma shape is a beautiful green and ivory pattern inlaid with roses and foliage in the natural colors. This is a very dainty pattern and sure to please.
Furnished only in the Thelma Shape.

			List
No. 27 T. B. 2	100	100 pc. Set	$56.00
No. 27 T. B. 2	50	50 pc. Set	$28.80

COLONIAL INITIALED
3 C 2 12 G H

COLONIAL INITIAL Pattern No. 3 C 2 12 Coin gold shell handles. is, we believe, the prettiest Initialed ware to be offered and has been one of our very best sellers Sold only on Colonial shape

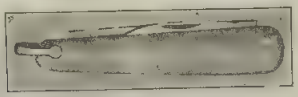
			List
No 3 C 2 12 G H	100	100 pc Set	$48 20
No. 3 C 2 12 G H	50	50 pc Set	$24.50

WATCH CHAIN KNIVES

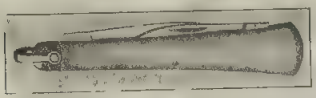
PEARL

American Made.

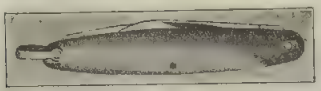
A very high grade and exclusive variety of Pearl Watch Chain Knives. Absolutely the most skilled craftsmen and the best materials obtainable go into the production of these high quality knives. Any man who owns one of these knives, derives a sense of proper dress which becomes impressive to others also. Full Crocus Blades of lasting quality; brass linings and gold filled bales; fully warranted in every respect. These knives come six in a racked box, exceptionally suitable for display, one of each number or six knives of any one style, or any combination of numbers.



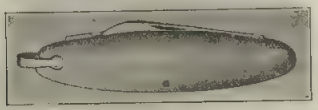
No. 1P—Size 2⅝ inches over all, 2 blades, one each end; large blade 1⅝ inches long, small blade 1 inch long. Brass lined; full Crocus blades; gold filled bales; weight, per dozen, ⅛ pound. Per dozen.....$15.75



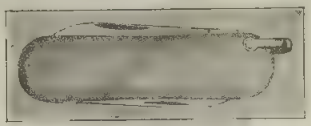
No. 2P—Size 2½ inches over all; 2 blades, one each end; large blade 1⅝ inches long; small blade 1 inch long; brass lined, full Crocus blades; gold filled bales; weight, per dozen, ⅛ pound. Per dozen.....$15.75



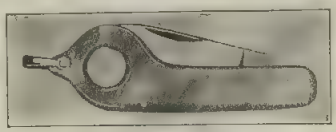
No. 3P—Size 2½ inches over all; 2 blade; one each end; large blade 1⅝ inches long; small blade 1⅛ inches long; brass lined; full Crocus blades; gold filled bales; weight, per dozen, ⅛ pound. Per dozen.....$15.75



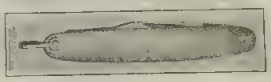
No. 4P—Size 2½ inches over all; 2 blades, one each end; large blade 1⅝ inches long; small blade 1⅛ inches long; brass lined; full Crocus blades; gold filled bales; shaped as illustrated. Weight, per dozen, ⅛ pound. Per dozen $15.75



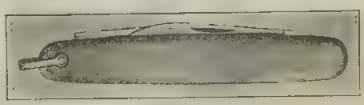
No. 6P—Size 2⅝ inches over all; 2 blades, one each end but opposite sides; either blade is 1⅝ inches long; brass lined; full Crocus blades; gold filled bales; shaped as illustrated. Weight, per dozen, ⅛ lb. Per dozen.$15.75



No. 7P—Includes the extra feature of the cigar clipper; size 2¾ inches over all, with one blade 1½ inches long; brass lined; full Crocus blades; gold filled balea; shaped as illustrated; weight, per dozen, ⅛ lb. Per dozen.$15.75



No. 8P—Very small size but just at attractive and dainty as the larger knives Size 2⅛ inches over all; 2 blades, one each end; large blade 1⅛ inches long; small blade 1 inch long; brass lined; full Crocus blades; gold filled bales; shaped as illustrated; weight, per dozen. ⅛ pound. Per dozen $15.75



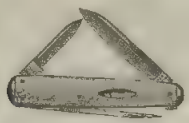
No. 9P—Size 2¾ inches over all; 2 blades, one each end; large blade 1½ inches long; small blade 1¼ inches long; brass lined full Crocus blades; gold filled bales; shaped as illustrated; weight, per dozen, ⅛ pound. Per dozen $15.75

Packed six assorted in a racked box.

POCKET KNIVES

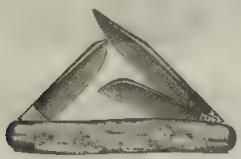
Universal.

All Universal pocket knife blades and springs are made of Wardlow's best pocket knife steel, properly forged and tempered to a uniform hardness best adapted for hard usage and long service. Each knife blade is hand sharpened and honed, assuring a lasting and keen cutting edge. Universal pocket knives carry an unlimited guarantee as to excellence of quality and workmanship.



3¼-inch pearl handle; 1¾-inch large spear blade; 1¼-inch spear pen blade; 2⅛-inch nail file blade on back; full polished; nickel silver lined; nickel silver tips and shield.

No. 73327—Weight, per dozen, ¾ lb. Per dozen..$49.90

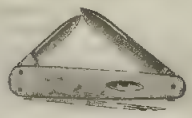


3⅞-inch pearl handle; 2⅝-inch large clip blade; 1⅝-inch sheep foot blade; 1½-inch spey blade; half polished; nickel silver lined; nickel silver bolsters and shield; knurled back.

No. 73480—Weight, per dozen, 2 lbs. Per dozen..$54.00

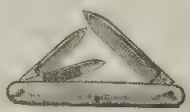
3¼-inch pearl handle; 2-inch large spear blade; 1⅛-inch spear pen blade; 1¼-inch nail file blade; half polished; nickel silver lined; nickel silver tips.

No. 73446—Weight, per dozen, ⅞ lb. Per dozen..$48.00



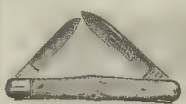
No. 73326—3⅛-inch pearl handles; 1⅝-in. spear blade; 1 3-16 inch pen blade, 2 3-16 inch nail file on back side. Nickel silver lined and knurled with shield. Full polished; weight, per dozen, ¾ lb. Per dozen...$49.90

No. 73144—3¼-inch pearl handle; 1¾-inch large spear blade; 1⅝-inch spear pen blade; nickel silver lined; 1⅜-inch nail file blade; full polished; weight, per dozen, 1¼ lbs. Per dozen..$37.15



No. 73149—3-inch pearl handle, 1¾-inch large spear blade; 1¼-inch pen blade; 1¼-inch nail file blade; nickel silver lined; polished; weight, per dozen, ¾ lb. Per dozen $37.15

No. 73633—3¼-inch pearl handle; 1¾-inch large spear blade; 1⅜-inch pen blade; 1⅜-inch nail file blade; nickel silver lined; nickel silver bolsters; full polished; weight, per dozen, ⅝ pound. Per dozen $39.00



No. 72309—3-inch pearl handle; 1⅛-inch large spear blade; 1⅛-inch pen blade; nickel silver lined; nickel silver bolsters; full polished; weight, per dozen, — pounds. Per dozen $24.60

No. 7406T—3⅜-inch pearl handle; 1⅞-inch large spear blade; 1½-inch pen file blade; brass lined; nickel silver tips. Weight, per dozen, 1¼ lbs. Per dozen....$46.75

All above, one-half dozen in a box.

AMERICAN MINING TOOL CO.

OTTUMWA, IOWA

Manufacturers of

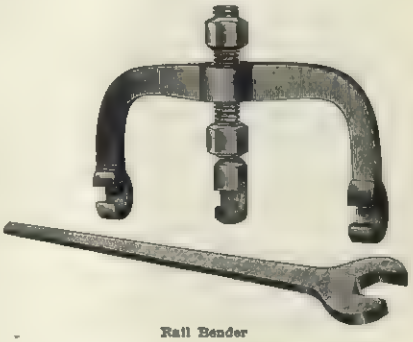
MINERS' TOOLS

Products

We manufacture a complete line of coal miners' tools and supplies, a few of which are illustrated on this page, but on account of space, we are unable to show our complete line.

In addition to those shown, we manufacture all kinds of tamping tools, sledges, wedges, different styles of picks, spike hatchets, miners' axes, several patterns of coal drills, breast augers and a complete line of miners' clothing and underwear.

Upon inquiry, we will take pleasure in sending our complete catalogue which gives a full description of our line.

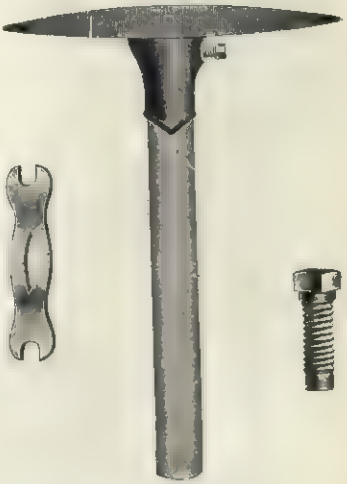


Rail Bender

Spike Bar

Little Giant Post Drill

Spike Hatchet



Scott Patent Pick

Common Pick

THE WYOMING SHOVEL WORKS

WYOMING, PA.

Manufacturers of

Wyoming RED EDGE Shovels and Picks

Products

Wyoming Red Edge Shovels and Picks for Coal and Metal Mines, Railroads, Contractors, etc.

Send for Complete Catalog

Upon request the Wyoming Shovel Works, Wyoming, Pa., will be pleased to send you a complete catalog showing Red Edge Picks and Shovels in all styles for all purposes.

Red Edge Shovels

Mining men who have carefully observed Red Edge under actual working conditions report that no other shovel preserves so long its original perfection of balance and its sharp "fighting edge." When Red Edge Shovels do begin to wear, as all shovels must, they wear smoothly and evenly, retaining their shape and rigidity to the end.

Every blade is forged from chrome nickel steel and by careful heat treatment is brought to the hardness of tool steel and the toughness of a steel spring. Though heat treatment adds a little to the cost of Red Edge, it adds immeasurably to its durability. But only after the blade has passed the severest sort of tests is it given the band of red paint which marks it as inspected and passed—a genuine Red Edge.

Every Red Edge handle is a piece of XX Northern White Ash specially selected for its straightness of grain. The new pressed steel handle which is now furnished on all Red Edge short handle shovels (unless the old style wooden "D" is specified) permits of the wooden shaft being fitted so that the lift comes against the grain. This is a decided advantage in heavy work.

Red Edge Picks

Note the oval shaped arms which allow easier and deeper penetration—cleaner and quicker withdrawal. The perfect balance and accurate distribution of their weight make Red Edges seem much lighter than other picks of the same weight. Forged from solid bars of chrome-nickel steel—heat treated from point to point—you can use them almost indefinitely without re-dressing. You will find that a Red Edge outlasts two or three ordinary picks.

Anthracite Coal Scoop

Bituminous Coal Shovel

Round Point Shovel

Coal

Length.... 15	Inches	Weight...2	Lbs.
Length.....16	Inches	Weight...2¼	Lbs.
Length.....17	Inches	Weight...3	Lbs.

Mining

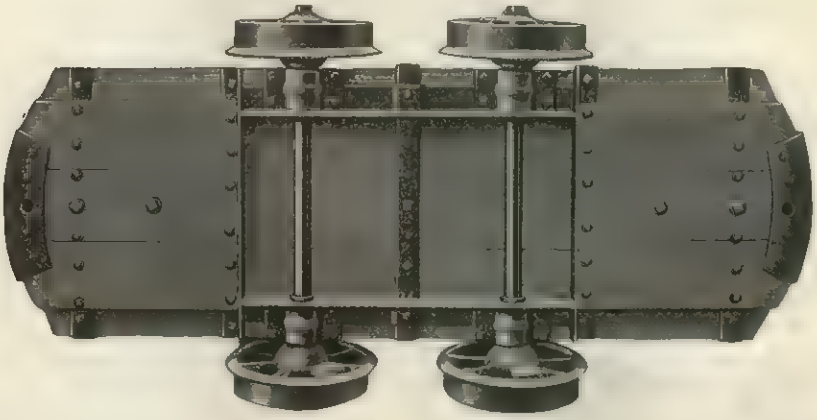
Length.... 21	Inches	Weight.....4	Lbs.
Length.... 23	Inches	Weight.....5	Lbs.

Railroad and Clay

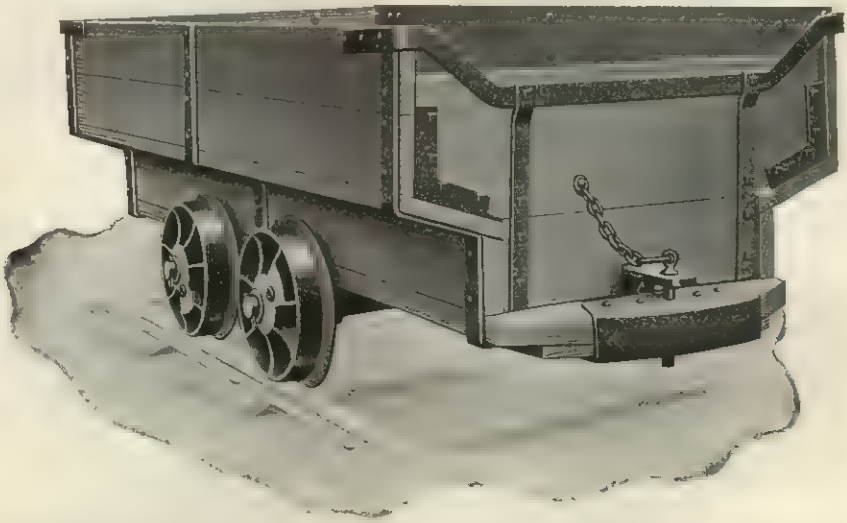
Length.....26	Inches	Weight.....7	Lbs.
Length.....27	Inches	Weight.....8	Lbs.

Angle Bar Truck Equipped With Open Face Cage Valve Oiling or Cap Wheel

IT PAYS TO MAKE / USE THE BEST



To those who do not wish to equip their cars with Roller Bearing Wheels we recommend our Cage Valve Oiling Wheel as illustrated above in connection with our Angle Bar Truck Design. Can be applied to any type mine car.



We were the originators of the Circular Pressed Steel Bumper shown on cars illustrated above.

Remember, we will gladly send our Catalog upon request. An efficient Engineering Department is at your disposal, at all times. General Sales Office, Canal Fulton, O.

GUSTAFSON MANUFACTURING CO.

CHATTANOOGA, TENN

TRADE MFD BY GUSTAFSON MFG CO MARK

Engineers, Founders, Machinists

Products

Highest Grade Mine Cars of Wood, Steel, or Composite; Chilled Car Wheels, either Plain, Self-Oiling, or Roller Bearing; Incline Rollers; Mine Equipment.

Gustafson Pressed Steel Truck

Take a look at this Pressed Steel Truck, with roller bearing wheels. Just what you have been looking for to put under your old cars to increase output of coal and eliminate repair bills.

Gustafson Pressed Steel Truck

The trambars are made of heavy open hearth steel flats with oblong axle openings, which allow the axles vertical play, so that the wheels can adjust themselves to ordinary inequalities of the track and prevent derailment.

The crossties are turned up at the ends and are double riveted to the trambars and diagonal braces, making a complete, practically indestructible steel truck with long side support on top of trambars and long end support on crossties. This prevents the tendency of the car bottom to sag at ends and the annoyance of the bumpers interlocking.

Wheels

Our Roller Bearing Wheels are made of the best grade of iron—a large proportion being charcoal iron—in order to increase the strength of the chilled tread and wearing qualities of the wheel.

They are made for either solid rollers or Hyatt Rollers, and are so designed that they are dirt, dust and waterproof.

They are easily taken off and replaced on axle.

Axles

Our axles are made from specially selected high carbon open hearth steel, with special smooth finish on bearings, insuring easy running.

Brake

The brake is positive and quick in action and so located that in case of derailment it can not be injured.

Located centrally to the wheels, the block does not bear down and rub when the brake is off, thus removing a constant source of friction, as found when the block is above the wheels.

Oiler

The Gustafson Rapid Fire Oiler is the quickest device for forcing lubricating oil into all center oiler type of mine car wheels, and will save barrels of oil each month.

THE CAR MOVER OF QUALITY

DESIGNED FOR POWER CONSTRUCTED FOR SERVICE

BACKED BY RELIABILITY

Only the best materials obtainable are used in the manufacture of this mover, and every part is fully Guaranteed.

Manufactured only by the

APPLETON CAR MOVER CO., Appleton, Wis.

MOTORCYCLE LUGGAGE CARRIERS—See Carriers, Luggage

MOTORCYCLE SIDE CAR HUBS—See Hubs, Automobile and Side Car

MOTORCYCLE TIRES—See Tires, Bicycle

MOTORCYCLE TOOL BOXES—See Boxes, Tool, Motorcycle

MOTORISTS' GAUNTLETS—See Gloves and Gauntlets, Motorists'

MOTORISTS' GLOVES—See Gloves, Motorists'

MOTORISTS' LEGGINGS—See Leggings, Motorists'

MOTORS, Boat, Inboard

Algonan Mach. & Boat Wks., Algonac, Mich.

MOTORS, Boat, Outboard

Aerothrust Engine Co., La Porte, Ind.
Algonac Mach. & Boat Wks., Algonac, Mich.
Allen, Carence J., 305 24th, Milwaukee, Wis "Amphion"
Amphion—See Allen, Clarence J.
Arrow Motor & Mach. Co., 727 Frelinghuysen Ave., Newark, N. J. "Waterman Porto"
Bantam—See Caille Perfection Motor Co.
Caille Perfection Motor Co., 6219 2d Blvd., Detroit, Mich. "Bantam," "Liberty"
Elto Outboard Motor Co., Home Bldg., Milwaukee, Wis.
Evinrude Motor Co., 27th and Lake, Milwaukee, Wis.
Henninger & Ayes Mfg. Co., Portland, Ore.
Johnson Motor Co., South Bend, Ind.
Kohan Mfg. Co., 241 S. Water, Milwaukee, Wis.
Liberty—See Caille Perfection Motor Co.
Lockwood Ash Motor Co., Jackson, Mich.
Miller Engine Co., 2351 N. Tallmen Av., Chicago, Ill.
Nicholde & Co., 425 Grand River Av., Detroit, Mich
Olmstead (A. E.) & Sons, Pulaski, N. Y.
Production Foundries Co., Ann Arbor, Mich.
Spinaway Boat Motor Co., Freeport, Ill.
Waterman Porto—See Arrow Motor & Mach. Co.
Wisconsin Mach'y. & Mfg. Co., 51st & Burnham Sts., Milwaukee, Wis.

MOTORS, Electric, Toy

Gilbert (A.C.) Co., New Haven, Conn
Ives Mfg. Corp., Bridgeport, Conn.
Knapp Electric & Novelty Co., 511 W. 51st, New York, N. Y.
Lionel Mfg. Co., 48 E. 21st, New York, N. Y.
Weeden Mfg. Co., New Bedford, Mass.

MOTORS, Inboard See Motors, Boat, Inboard

MOTORS, Outboard—See Motors, Boat, Outboard

MOTORS, Water

Red Devil—See Smith & Hemenway Co
Smith & Hemenway Co., 101 Colt, Irvington, N. J. "Red Devil"
Yost Superior Co., Springfield, O.

MOULDS—See Molds

MOUNTINGS, Radio—See Radio Mountings

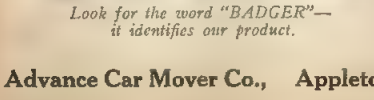
MOUSE TRAPS—See Traps, Rat and Mouse

MOVERS, Car

A. A. A.—See Atkins (E. C.) & Co.
Advance Car Mover Co., Appleton, Wis. "Badger," "Ideal," "New Badger"
★For descriptive data of the above, see index on page 6
Aldon Co., 5355 Ravenswood Av., Chicago, Ill.
American Logging Tool Co., Evart, Mich.
★For descriptive data of the above, see index on page 6
Appleton Car Mover Co., Appleton, Wis. "Atlas"
★For descriptive data of the above, see index on page 6
Atkins (E. C.) & Co., Indianapolis, Ind. "A. A. A."
★For descriptive data of the above, see index on page 6
Atlas—See Appleton Car Mover Co.
Badger See Advance Car Mover Co.
Deere & Co., Moline, Ill. "Samson"
Fairmont Mining Mchy. Co., Fairmont, W. Va.
Franklin Barn Equipment Co., Monticello, Ia.
Handian-Buck Mfg. Co., 210 N. 3d, St. Louis, Mo. "Victor"
Hilts Wrench & Mfg. Co., Richford, N. Y. "Never-Slip"
Ideal—See Advance Car Mover Co.
Kalamazoo Railway Supply Co., Kalamazoo, Mich.

The BADGER Railway Car Mover

Nationally Known as *The Car Mover with the Push*



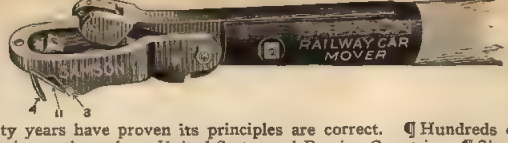
Look for the word "BADGER"— it identifies our product.

The BADGER Railway Car Mover is well advertised to large fields of users, including grain mills, mills, etc.

Some of its advantages are its powerful leverage, its Never Slip spurs, and its certified malleable metal parts. It is light and well balanced, and its castings are guaranteed for 6 months. It sells easily and quickly.

Ask your Jobber for the BADGER before writing us.

Advance Car Mover Co., Appleton, Wis., and Welland, Ont.



Thirty years have proven its principles are correct. ¶ Hundreds of thousands in use throughout United States and Foreign Countries. ¶ Six months' guarantee against defective material. ¶ Ten days' trial to determine acceptance.

G. D. Rowell & Son Appleton, Wis.

MOVERS, Car (Continued)

Michigan Truck & Lumber Co., Holly, Mich.
Never-Slip—See Hilts Wrench & Mfg. Co.
New Badger—See Advance Car Mower Co.
Rowell (G. D.) & Son, Appleton, Wis. "Samson"
★For descriptive data of the above, see index on page 6
Samson -See Deere & Co.
Samson—See Rowell Mfg. Co.
Sheldon—See Stephens-Adamson Mfg. Co.
Sheldon—See Webster Mfg. Co.
Stanley Wks., New Britain, Conn.
Stephens-Adamson Mfg. Co., Aurora, Ill. "Sheldon"
Victor—See Handlan-Buck Mfg. Co.
Verona Tool Wks., 1st National Bldg., Pittsburgh, Pa.
Webster Mfg. Co., 4520 Cortland, Chicago, Ill. "Sheldon"
Westlink Mfg. Corp., Menasha, Wis.

MOVING PICTURE MACHINES, Children's

Ab-cum-o-graph—See Cummings, A. B.
American Pictograph Co., Manchester, N. H. "Kinograph"
Cummings, A. B., Attleboro, Mass. "Ab-cum-o-graph"
Keystone Mfg. Co., 53 Wareham, Boston, Mass.
Kinograph—See American Pictograph Co.

MOWER KNIFE GRINDERS—See Grinders, Sickle and Mower Knife

MOWERS, Field—See Mowing Machines

MOWERS, Lawn, Repair Parts for—See Repairs, Lawn Mower

MOWERS, Lawn, Children's—See Mowers, Lawn, Toy

MOWERS, Lawn, Hand

A—See The Philadelphia Lawn Mower Co.
Admiral—See F. & N. Lawn Mower Co.
Advance—See American Lawn Mower Co.
Advance—See Elwood Lawn Mower Mfg. Co.
Aero—See Dille & McGuire Mfg. Co.
Adine—See Chadborn & Coldwell Mfg. Co.
All Day—See The Philadelphia Lawn Mower Co.
Amazon—See Coldwell Lawn Mower Co.
American Beauty—See Coldwell Lawn Mower Co.
American Lawn Mower Co., Muncie, Ind. "Advance," "Beacon," "Columbia," "Delaware," "Congress," "Favorite," "Federal," "Forest Glen," "Garland," "Hawthorne," "Liberty," "Majestic," "Marvel," "National," "New Eclipse," "New Peerless," "Oakland," "Overland," "Paragon," "Pennant," "Plymouth," "Premier," "Rapid," "Regina," "Speedy," "Sterling," "Success," "Tip Top," "Tremont," "Triumph," "Varsity," "Victoria," "Viking," "Yale"
★For descriptive data of the above, see index on page 6
Annex—See F. & N. Lawn Mower Co.
Apollo—See Whitaker Mfg. Co.
Auto—See F. & N. Lawn Mower Co.
Automatic—See Blair Mfg. Co.
Baby Grand—See F. & N. Lawn Mower Co.
Ball Bearing—See Stearns (E. C.) & Co.
Banner—See Mast, Foos & Co.
Bay State—See Blair Mfg. Co.
Beacon—See American Lawn Mower Co.
Beacon—See Whitaker Mfg. Co.
Beacon—See Coldwell Lawn Mower Co.
Beconia—See Whitaker Mfg. Co.
Belmont—See Pennsylvania Lawn Mower Wks.
Ben-Hur—See Mast, Foos & Co.
Blair Mfg. Co., Springfield, Mass. "Automatic," "Bay State," "Cyclemower," "Drawcut," "Easy," "Hercules," "Money-back," "Universal," "Yankee"
Bluebell—See Clarinda Mfg. Co.
Blue Jay—See Townsend (S. P.) Co.
Buckeye—See Mast, Foos & Co.
C—See The Philadelphia Lawn Mower Co.
Cadet—See Coldwell Lawn Mower Co.
Cardinal—See Clarinda Mfg. Co.
Chadborn & Coldwell Mfg. Co., Newburgh, N. Y. "Aidine," "Delevan," "Dexter," "Golden Glow," "Invincible," "Lenox," "New Model," "Newburgh," "Pastime," "Royal Blue," "Shamrock," "Sunbeam," "Sunset," "Swift Cutter," "Trimmer," "Ventnor"
Chief—See Clarinda Mfg. Co.
Chicago—See Herschel (R.) Mfg. Co.
Clarinda Mfg. Co., Clarinda, Ia. "Bluebell," "Cardinal," "Chief," "Hawkeye"
Clearing—See Whitaker Mfg. Co.
Clearfield—See Whitaker Mfg. Co.
Clearlawn—See Whitaker Mfg. Co.
Clipper Lawn Mower Co., Dixon, Ill. (Sliding Knife)
Clippette—See Morley Mchy. Corp.
Clover Leaf—See F. & N. Lawn Mower Co.
Cocomo—See Whitaker Mfg. Co.
Coldwell Lawn Mower Co., Newburgh, N. Y. "Amazon," "American Beauty," "Beacon," "Cadet," "Coldwell Ball Bearing," "Colonial," "Demountable Putting Green," "Duchess," "Ever Ready," "Garden City," "Gem," "Greenwood," "Hickory," "Hickory, Jr.," "Imperial," "Improved Excelsior Putting Green," "Interstate," "Jewel," "Lakewood," "Lightning," "Maple," "Metropolitan," "Newport," "Old Honesty," "Pacemaker," "Park," "Rajah," "Regal," "Seawall," "Suburban"
Columbia—See American Lawn Mower Co.
Coldwell Ball Bearing—See Coldwell Lawn Mower Co.
College—See The Philadelphia Lawn Mower Co.
Colonial—See Coldwell Lawn Mower Co.
Commonwealth—See Worcester Lawn Mower Co.
Congress—See American Lawn Mower Co.
Continental—See Pennsylvania Lawn Mower Wks.
Crestlawn—See F. & N. Lawn Mower Co.
Cyclemower—See Blair Mfg. Co.
Delaware—See American Lawn Mower Co.
Delevan—See Chadborn & Coldwell Mfg. Co.
Delta—See Pennsylvania Lawn Mower Wks.
Demountable Putting Green—See Coldwell Lawn Mower Co.
Derby—See Townsend (S. P.) Co.
Dewey—See The Philadelphia Lawn Mower Co.
Dexter—See Chadborn & Coldwell Mfg. Co.
Diamond—See Dille & McGuire Mfg. Co.
Diamond Junior—See Herschel (R.) Mfg. Co.
Diamond Special—See Herschel (R.) Mfg. Co.
Dille & McGuire Mfg. Co., Richmond, Ind. "Aero," "Diamond," "Glide," "Greenwood," "High Speed," "King," "Leader," "Matchless" "New Magic," "Perfection," "Richmond," "Sterling," "Supreme," "Terrace Special," "W. H. Winner," "Western"
Director—See F. & N. Lawn Mower Co.
Drawcut—See Blair Mfg. Co.
Drexel—See The Philadelphia Lawn Mower Co.
Duchess—See Coldwell Lawn Mower Co.
Duchess—See Whitaker Mfg. Co.
Duplex—See Mast, Foos & Co.
E—See The Philadelphia Lawn Mower Co.
Easy—See Blair Mfg. Co.
Easy—See Elwood Lawn Mower Mfg. Co.
Eclipse—See Reading Hdw. Co.
Eclipse Lawn Mower Co., Prophetstown, Ill.
Electra—See Pennsylvania Lawn Mower Wks.
Electric—See Herschel (R.) Mfg. Co.
Elm City—See Worcester Lawn Mower Co.
Elwood Lawn Mower Mfg. Co., Elwood, Ind. "Advance," "Easy," "Expert," "Grand," "Indiana," "New Hoosier," "Simplex"
Empire—See Reading Hdw. Co.
Ender's—See Winchester-Simmons Co.
Essex—See Townsend (S. P.) Co.
Ever-Ready—See Coldwell Lawn Mower Co.
Exmoor—See Whitaker Mfg. Co.
Expert—See Elwood Lawn Mower Mfg. Co.
F. & N. Lawn Mower Co., Richmond, Ind. "Admiral," "Annex," "Auto," "Baby Grand," "Clover Leaf," "Crestlawn," "Director," "Famous," "Fenden," "Great Arrow," "Henley Republic," "Ideal," "May Flower," "Melrose," "New American," "Paragon," "Trojan," "Victor," "Worthmower"

ARCHIE

The Karnival Kid

. . . his eyes sparkle!

A RONSON TOY

Loaded with fun for old and young at Hallowe'en, Thanksgiving and other parties, Mardi Gras, Carnivals, Fairs, etc.

A sensational, Profit-making NOVELTY

Dealers, everywhere, are ordering and reordering. More than 1000 gross gone in first few weeks

ARCHIE is the newest member of the family of Ronson Toys He's making a spectacular success. In fact, he's bidding fair to become the most successful of them all! Just pull the string for yourself and see his eyes throw sparks. But there's no fire—no danger.

You'll want to stock this new fun-maker—and stock it heavily! Archie combines every essential for large sales. He's *new*—arresting—funny. He's well made—so strong he'll practically last forever. He offers you large profits on quick sales. For he's advertised. Advertised in a way rarely equaled for any toy Striking full pages in *The Saturday Evening Post* and in the best of the children's publications are going to send the customers right into your store.

Advertised with full pages in The Saturday Evening Post, The Youth's Companion and The American Boy.

Order Archie NOW! And order him aplenty! One look at Archie will open any parent's pocketbook And you cannot afford to lose a single week in getting set for the flood of sales that will be started your way next month.

Send for price list and sample—see for yourself why he's the most comical and quickest selling toy ever made.

The ART METAL WORKS

For 37 Years Makers of Novelties That Sell

14 ARONSON SQUARE NEWARK, N. J.

Fine Imported Westminster Chime Regulators, 400-Day and Kitchen Clocks and Cottage Barometers

WELL MADE AND FINISHED. REPRESENT REMARKABLE VALUES AT THESE ATTRACTIVE LOW PRICES.

COTTAGE BAROMETER

Here is an article Mr. Merchant, that many of your customers will want. In many instances, they do not intend to make their selection from catalog, but where you place a dozen in stock, you will be surprised how quickly they will be sold. Place your order with us today. Note description: Made of wood, neely painted, with gravel roof and thermometer. Very attractive in appearance. Height, 6¼ inches. Width, 5½ inches. Indicates the weather six to eight hours ahead. In good weather lady appears, while in bad weather man appears.

No. 109A Each **$1.45**
No. 109B In lots of one dozen, each . **1.30**

ARDMORE CHIME REGULATOR

In homes and offices there is a constant demand for a Chime Regulator. While the cost in some instances is prohibitive, those really wishing such a high grade clock and instrument in procuring the same, truly cherish its possession. The Chimes are the purest, sweetest and most resonant ever heard. The movement is guaranteed an accurate timekeeper and our price for such a high grade [illegible] is low. Note description: Westminster Chime Regulator, genuine Mahogany case. Height 32 inches; width 13 inches; 8-inch silver plated dial. Beveled glass door, celebrated and renown "Becker" movement, 5 staffs, all through steel cut pinions. Eight-day full Westminster Quarter-hour Chime Strike.

No 750 Ardmore Chime Regulator, each **$99 00**

COTTAGE BAROMETER

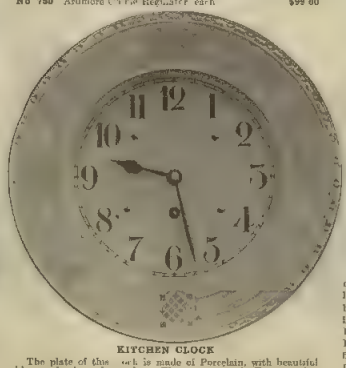
As a weather forecaster these barometers are fairly dependable. We know of numerous instances where they have been put to the test and gave an accurate and satisfactory account of themselves. As this is of such vital importance to all, every progressive Merchant should take advantage of our quantity price and place order at once. Note description: Made of fancy carved wood, with thermometer. Height, 9 inches; width, 6 inches. Durably constructed and richly finished. Indicates the weather six to eight hours ahead. In good weather lady appears, while in bad weather man appears.

No. 110A Each **$1.80**
No. 110B In lots of one dozen, each. **1.60**

400-DAY CLOCK

It runs 400 days with one winding. It is a clock of unusual interest. Requires no attention. Nothing to get out of order. Always rendering most accurate time. It has a rich brass base, highly polished. Height, 12 inches, diameter, 7½ inches; Ivory finished dial, 3 inches, glass globe, "Becker," highest quality movement made.

No. 476 Each **$36.75**



KITCHEN CLOCK

The plate of this clock is made of Porcelain, with beautiful blue and white decoration. The movement is Fourteen-day time and fitted with pendulum. The movement is enclosed in metal container, eliminating the possibility of dust entering. The Clock harmonizes and lends charm to sanitary appearing kitchens. A wonderful timekeeper.

No 1744 Each **$10 45**

400 DAY CLOCK

We offer above a recently imported new 400-day clock. It is identically the same as clock shown to left, except that it is fitted with a larger dial, thus being more symmetrical in design and pleasing in appearance. It is a 400-day clock in every respect, and an attractive Nothing to get out of order. Height, 12 inches, diameter, 7½ inches. Ivory finished fancy French dial, 4 inches, glass globe. Fitted with the celebrated "Becker" highest quality movement made. Choice of solid mahogany or highly polished brass base.

No. 500M Mahogany Base Clock, each **$38.50**
No 500B Brass Base Clock, each **38.50**

The Celebrated New Haven Clock Co.'s Fine Solid Mahogany Small Mantel Clocks

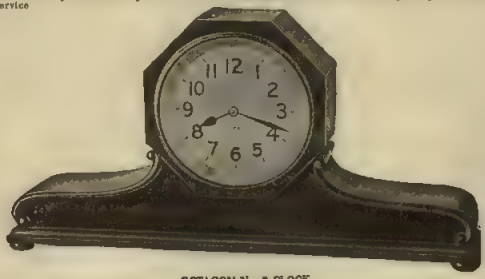
The clocks illustrated below except the Stuart Clock and those on the following page **ARE FITTED WITH THE NEW DEPENDABLE AND ARTISTIC 12-DAY MOVEMENT** This movement has a longer wider and thinner main-spring than previous movements of this class and a larger winding barrel It will run from 18 to 21 days and keep accurate time for at least 12 days with one winding On our 12 day rating there is therefore a large reserve power

All pinions are cut steel, with small pivots smoothly finished to eliminate friction and wear The plates and wheels are manufactured of heavy hard rolled brass with finely made teeth The balance shafts are hardened by a new electrical process and are polished The movement is made to set standards under close inspection and thoroughly tested before and after fitting into the case All parts are easily accessible In producing this movement, we have made a distinct advance in the art of building durable and dependable timepieces. The clocks illustrated have been carefully designed and are not only pleasing in appearance, but will give years of satisfactory service

No. 3817 CANDLESTICKS

Height 9 inches, width, 4 ½ inches, Solid mahogany, hand rubbed and finished in a rich brown. Has brass candle cups. Ideal as living room decorations or to abide with your Tambour clock

No. 1813 Per pair. **$8.75**



OCTAGON No. 2 CLOCK

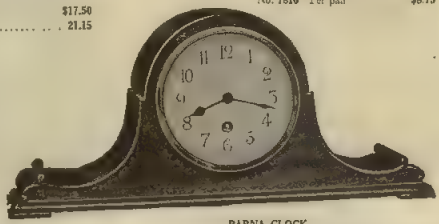
Medium size Mantel Clock. Solid mahogany cabinet, hand rubbed and finished in a rich brown. Height, 6 inches; width, 12 inches; dial, 3¼ inches. Fitted with the New 12-day high grade New Haven movement (described above) A new design that is unquestionably rich and prepossessing in appearance

No. 1814 Silver Dial each **$17.50**
No. 1815 Silver Radium Dial, each.. .... **21.15**

PARAGON CANDLESTICKS

Height, 9 inches; width, 4¼ inches. Solid mahogany, hand rubbed and finished in a rich brown. Has brass candle cups. Would match perfectly any solid mahogany clock from this showing in cate og.

No. 1816 Per pair **$8.75**



PARNA CLOCK

Medium size Mantel Clock Solid mahogany cabinet, hand rubbed and finished in a rich brown. Height, 6¼ inches, width, 14½ inches, dial 5 inches. Fitted with the New 12-day high grade New Haven movement (described above

No. 1819 Silver Dial each. **$21.00**
No. 1820 Silver Radium Dial, each **24.65**

JACOBEAN No. 55 CLOCK

Medium size Mantel Clock. Solid mahogany cabinet, hand rubbed and finished in a rich brown Height, 6½ inches; width, 13½ inches; dial, 5 inches. Fitted with the New 12-day high grade New Haven movement (described above)

No. 1817 Silver Dial, each.. ... . **$18.85**
No. 1818 Silver Radium Dial, each **22.50**

QUAYLE CLOCK

Medium size Mantel Clock. Solid mahogany cabinet hand rubbed and finished in a rich brown Height, 6 ½ inches width, 12¾ inches dial, 3½ inches. Fitted with the New 12-day high grade New Haven movement described above .

No. 1821 Silver Dial, each **$16.00**
No. 1822 Silver Radium Dial, each..... ..... **16.95**

STUART PERIOD DESIGN CLOCK

A clock that possesses dignity and stateliness to a marked degree Movement is Rack and Snap construction, 8-day half-hour strike, cathedral gong. Plates and wheels highly polished. Cabinet in solid mahogany. Height, 10⅝ inches; width, 9½ inches. 7-inch Silver finish dial.

No. 1823 Stuart Solid Mahogany Clock, each.. **$39.15**

A. M. P. A. INVESTIGATES RADIO REVIEWS

Broadcasting of radio reviews of moving pictures is being investigated by the Associated Motion Picture Advertisers, Inc., following recent alleged unfairness displayed by certain New York newspaper critics who have arranged with big eastern stations to send out their reviews by wireless.

The matter was brought up at the first meeting of the new regime of the A. M. P. A., when the newly elected officers, headed by President A. M. Botsford, officially took up their responsibilities and committee appointments for the year were made.

A. M Botsford, newly elected president of the A. M. P. A., was directed in a motion passed by the members to appoint a committee to make a thorough investigation of the matter and to report back with recommendations as to what may be done in the interests of the public as a whole as well as the motion picture industry.

The officers of the new administration who went in with President Botsford at Thursday's meeting were: Vice president, Charles W. Barrell; secretary, Walter Eberhardt; Treasurer, Glendon Allvine

The new board of directors includes the four officers plus Charles Einfeld, Irving Green, James Loughborough, Edward McNamee and Lon Young. At the board's first meeting they elected an advisory council consisting of Jerome Beatty, Arthur Brilant, John Flinn, Paul Gulick and C. L. Yearsley.

At the Thursday meeting an election was held which placed Edward McNamee and Charles Einfeld on the finance committee, which under the constitution and by-laws of the A. M. P. A. is automatically headed by the president, with the secretary and treasurer as the other members

President Botsford announced his appointments on five committees for the ensuing year as follows:

Auditing—Julian Solomon, chairman; Hopp Hadley and Fred Baer.

Publicity —W. E. Mulligan, chairman; Edward L. Klein and L. H. Mitchell

Entertainment—Harry Reichenbach, chairman; Russell Holman, Melville A. Shauer, Tom Wiley, the past president, the board of directors and the advisory council.

Speakers—Bert Adler, chairman, and Walter Eberhardt

Art — Vincent Trotta, chairman; Harry Lewis, Karoly Grosz, Hal Phyffe and C. L. Yearsley.

Morris Ryskind formally took over the A. M. P. A. Bulletin as managing editor, with Bert Adler as business manager

Harry Reichenbach took up the reins as National Chancellor of the U. S. Chamber of Commerce.

President Botsford has not yet made his appointments to the membership committee.

* * *

PRODUCERS DISTR. CORP. RE-DIVISION BRANCHES

Producers Distributing Corporation has made a new division of its exchanges sub-dividing the central group of branch offices into two divisions to be known as the Mid West Division and the Central Division

The Central Division will hereafter consist of the exchanges at Cleveland, Cincinnati, Detroit and Indianapolis.

The Mid-West Division will embrace the Chicago, St. Louis, Kansas City, Omaha and Minneapolis Branches.

Mr. Cecil Maberry, who has been Central Division Manager, has been made Mid-West Division Manager, and Robert Cotton has been appointed manager of the new Central Division

Mr. Cotton has been acting in the capacity of special representative of Producers Distributing Corporation in the Cleveland territory and is well known in film sales circles He was formerly associated with the World Film, Fox and Vitagraph Companies.

Samuel Goldwyn producer of First National pictures signs Ronald Colman leading screen actor to a five year contract.

GOLDWYN SIGNS COLEMAN

Ronald Colman, who won recognition by his characterization of the young soldier in "The White Sister," has signed a five year contract with Samuel Goldwyn. Goldwyn and Fitzmaurice chose him for the leading male role in the George Fitzmaurice production, "Tarnish." Colman will also play the leading role in the forthcoming Fitzmaurice production not as yet titled.

ED. HOPCRAFT TAKES KNOCKERS TO TASK

Ed. M. Hopcraft, general sales manager for Cranfield & Clarke, just back from an extensive sales trip which took him to the west coast, issued a statement in which he takes to task the so-called knockers in the Independent field. In part, Ed. Hopcraft says: "It is invariably the rule when a State Right man comes back from a sales trip he will relate of the miserable financial conditions in the Independent market he found in the territories he traveled through. His only optimistic observations are that he believes that the cotton crop and the corn fields are going to get an even break this year.

"Contrary to the general rule, in making up my reports, I am glad to say that I have found conditions as a whole in the Middle West very favorable indeed. Especially the Chicago and surrounding territory are on a better and more sound basis than ever before in many moons. I have been told by both exchangemen and exhibitors alike that they had no summer this year to talk about at all.

"I saw the building of many new theatres, which surely bodes well for the future of film conditions in general in this territory. These new houses will open up the market for more pictures and create a larger field for the Independents to sell their wares. This is only one of the many encouraging signs of progress in my many cheering observations.

"Another thing I noticed is that there is no prejudice nor lack of enthusiasm towards British made pictures. In fact, all of the franchise holders distributing the Cranfield & Clarke products are reporting that they are more than thriving with their current releases.

"I want to add that Cranfield & Clarke will shortly make an important announcement of three big specials they have just acquired and which will soon be ready for release."

* * *

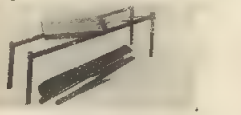
KEENAN TO STAR

Frank Keenan, star of stage and screen, has been signed by Metro-Goldwyn-Mayer, to star in the screen version of George Beaumont's story, "Dixie," which appeared recently in one of the national magazines. It is a colorful story dealing with the early days in the South. Keenan will again be given the opportunity to portray the part of the stern old southern gentleman. It was in "The Coward" that Keenan scored his initial screen success in the role of the old southern colonel.

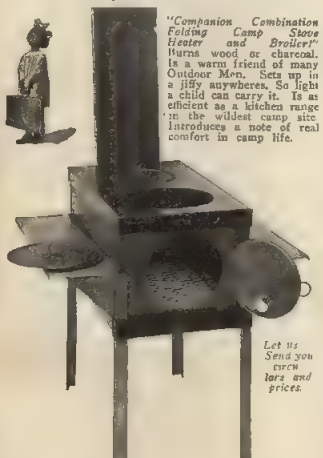
Real Selling "Companions"

For the Sporting Goods Department

Our original aluminum *"Companion Hiker's Kit"* for preparing and serving that delightful outdoor meal, for two hungry Hikers, Campers, Boy Scouts or Tourists. Contains just 17 necessary utensils all nested and enclosed in a durable canvas case with shoulder straps. Recommended by Boy Scout Masters.



Our *"Companion Camp Fire Bridge,"* a new item with us, but always in use by the "Old Timer" who had them made at the Smithy's Forge. As sturdy as any bridge yet is extremely light and compact. Folds in a handy canvas case. Made in two sizes. 18 and 24", to retail at 75c and $1.00 per pair, and just can't be beat at that price.



"Companion Combination Folding Camp Stove Heater and Broiler" Burns wood or charcoal. Is a warm friend of many Outdoor Men. Sets up in a jiffy anywheres. So light a child can carry it. Is as efficient as a kitchen range in the wildest camp site. Introduces a note of real comfort in camp life.

Let us Send you circulars and prices.

Artisan Sheet-Metal Corporation

100-106 Platt St., Rochester, N. Y.

STOVE POKERS—See Pokers, Stove

STOVE POLISHES—See Polishes, Stove

STOVE POLISHING MITTENS—See Mittens, Polishing

STOVE PUTTY—See Putty, Stove

STOVE REPAIRS—See Repairs, Stove

STOVE RIVETS—See Rivets, Stove

STOVE TRUCKS—See Trucks, Stove

STOVES—See also Ranges; also Heaters

STOVES, Alcohol

American Stove Co., 827 Chouteau Av., St. Louis, Mo.
Fargo Aluminum Co., Taunton, Mass.
Houchin (Thos. W.) Co., 393 Broadway, New York, N. Y.
Landers, Frary & Clark, New Britain, Conn. "Universal"
Manning, Bowman & Co., Meriden, Conn.
New York Stamping Co, 11th & Berry Sts., Brooklyn, N. Y.
Overland Mfg. Co., 71 W. 23d, New York, N. Y.
Silver & Co., 304 Hewes, Brooklyn, N. Y.
Sternau (S.) & Co., 9 E. 37th, New York, N. Y.
Sweeney (W. H.) Mfg. Co., 30 Main, Brooklyn, N. Y.
Theros Co., 243 Broadway, New York, N. Y.
Universal—See Landers, Frary & Clark

STOVES, Butchers'

Butler Co., Butler, Ind.
Treaty Co., Greenville, O.

STOVES, Camp

Acorn Brass Mfg. Co., 426 S. Clinton, Chicago, Ill.
Adams Co., Dubuque, Ia.
Aluminum Cooking Utensil Co., New Kensington, Pa.
American Gas Mach. Co., Albert Lea, Minn. "Kampkook"
Andrews Wire & Iron Wks. Div., Washburn Co., Rockford, Ill.
Artisan Sheet Metal Corp., Rochester, N. Y. "Companion"
★For descriptive data of the above, see index on page 6
Banner Accessory Mfg. Co., 2629 La Salle, St. Louis, Mo
Basford, H. R., 180 New Montgomery, San Francisco, Cal.
Baxter, W. E., Louisville, Ky.
Buda Co., Harvey, Ill.
Channon Emery Stove Co., Quincy, Ill.
Coleman Lamp Co., Wichita, Kan.
Collis Co., Clinton, Ia.
Colt (J. B.) Co., 30 E. 42d, New York, N. Y.
Companion—See Artisan Sheet Metal Corp.
Cree, D. W., Grigsville, Ill.
Crider (E. J.) & Sons, Silex, Mo.
Enterprise Mfg. Co., Akron, O.
Estate Stove Co., Hamilton, O.
Excelsior Stove & Mfg. Co., Quincy, Ill. "National"
Foss & Jones, Pasadena, Cal.
Gross Mfg. Co., Council Grove, Kan.
Handy—See National Stamping & Electric Wks.
Hemp & Co., 1959 Vandeventer Av., St. Louis, Mo.
Hercules Stovette Mfg. Co., 3166 Hiawatha Av., Minneapolis, Minn. "Stovette."
Hummer See Kremer Metal Products Co.
Hunter & Kent, Superior, Wis.
Iron Horse—See Rochester Can Co.
Jackes—Evans Mfg. Co., Main & Tyler Sts., St. Louis, Mo.
Jewett & Co., 5 Military Pl., Buffalo, N. Y.
Juetrite Mfg. Co., 2061 Southport Av., Chicago, Ill.
Kalamazoo Kamp—See Knapper Sheet Metal & Mfg. Co.
Kampkook See American Gas Mach. Co.
Kamp Kooker—See Kohl Hardware Co.
Knapper Sheet Metal & Mfg. Co., Kalamazoo, Mich. "Kalamazoo Kamp."
Kohl Hardware Co., Ripon, Wisc. "Kamp Kooker "
Kraft, A. C., 161 W. Lake, Chicago, Ill.
Kremer Metal Products Co., 721 Fulton, Chicago, Ill. "Hummer"
Kuder, Chas. A., 5815 Wentworth Av., Chicago, Ill.
Licking Stove Wks., Newark, O.
Lindemann (A. J.) & Hoverson Co., Cleveland & 1st, Milwaukee, Wis.
Livingood Mfg. Co., Lebanon, Pa.
Little Wonder Stove Co., 17260 Sable, Detroit, Mich.
Madsen Iron Wks., 2416 E. 16th, Los Angeles, Cal.
Masura Mfg. Co., 412 6th St., St. Louis, Mo.
Meeker Bros. Iron Co., 421 S 6th, St. Louis, Mo.
Monts—See Prentiss-Wabers Stove Co.
National Stamping & Electric Wks., 3212 W. Lake, Chicago, Ill. "Handy"
National—See Excelsior Stove & Mfg. Co.
Not-A-Bolt—See Troy Pdry. & Mach. Co.
Nugget—See United Steel & Wire Co.
Outing Stove Co., Silex, Mo.
Prentiss-Wabers Stove Co., Wisconsin Rapids, Wis. "Monts"

SKIS

Norway Pine.

These skis are made of the best quality selected stock Norway pine, finished in natural wood with several coats of oil and waterproof varnish. They are supplied with heavy toe-straps.

No. 4P—4 feet long, boys' size. Per pair.... ...$1.00
No. 5P—5 feet long, boys' size. Per pair..... 1.65
No. 6P—6 feet long, boys' size. Per pair..... 2.25
No. 7P—7 feet long, boys' size. Per pair..... 2.75
No. 7½P—7½ feet long, men's size. Per pair.... 3.00
No. 8P—8 feet long, men's size. Per pair..... 3.25

Pine, Painted Green.

Painted green, otherwise same as above.

No. 4G—4 feet long, boys' size. Per pair.... ..$1.00
No. 5G—5 feet long, boys' size. Per pair..... 1.65
No. 6G—6 feet long, boys' size. Per pair..... 2.25
No. 7G—7 feet long, boys' size. Per pair..... 2.75
No. 7½G—7½ feet long, men's size. Per pair.... 3.00
No. 8G—8 feet long, men's size. Per pair..... 3.25

Edge Grain Pine.

Made from select grain stock. Nothing but carefully chosen material is used in making these skis. Finished in natural wood with several coats of oil and waterproof varnish. All have heavy toe straps.

No. 4EP—4 feet long, boys' size. Per pair.....$1.25
No. 5EP 5 feet long, boys' size. Per pair..... 2.00
No. 6EP —6 feet long, boys' size Per pair..... 2.50
No. 7EP 7 feet long, boys' size. Per pair..... 3.00
No. 7½EP—7½ feet long, men's size. Per pair.. 3.40
No. 8EP—8 feet long, men's size. Per pair..... 3.60

Mahogany.

These are made of the best quality selected birch stock in a beautiful mahogany finish, with fancy grooved white stripes. They are supplied with heavy toe straps and corrugated rubber foot rests. Made in boys' sizes only. All have toe straps.

No. 4M—4 feet long, boys' size. Per pair.....$2.00
No. 5M—5 feet long, boys' size. Per pair..... 2.50
No. 6M—6 feet long, boys' size. Per pair..... 3.50
No. 7M—7 feet long, ladies' or boys' size. Per par 4.50

Ash.

These are made of the very best selected quality ash stock that can be obtained, finished in black with fancy grooved white stripes and also in natural wood with dark stripes. Prices include heavy leather toe strap and corrugated rubber foot rests.

No. 7A—7 feet long, ladies' size. Per pair.. ...$6.00
No. 7½A—7½ feet long, men's size. Per pair... 6.50
No. 8A—8 feet long, men's size. Per pair..... 7.00
No. 9½A—9½ feet long, men's size, is made with straight and rabbitted sides and is adapted to level land racing. Per pair..... 9.00

One pair in a bundle, open stock.

Hickory.
Champion Model.

This ski is made of the very best quality straight grained second growth hickory, finished in black, with fancy grooved white stripes and also in natural wood with dark stripes. It is intended more particularly for a leaping ski to be used by the experts in their leaping contests. This, like all these skis, is made after the very latest Norwegian design and the experts absolutely refuse to use any other.

No. 7½H—7½ feet long, men's expert, with toe strap and rubber foot rest. Per pair.....$7.50

One pair in a bundle, open stock.

SKI HARNESS

Strand's—Leather binding with metal side plates.
Per pair $8.50

SKI POLES

No. 1—6 feet long with steel point and snow head.
Each $1.00

No. 1B—5 feet long, boys' size, otherwise as above.
Each ..... .50

Open stock.

SKI SKOOTS

A Distinctly New and Original Winter Sport Article.

The ski skoot takes the place of sleds, skis and toboggans. It is light, compact and strong, easy to propel and very speedy. As its name implies, it is skooted along by placing one foot on the runner and pushing with the other. A rapid means of conveyance and for hill-sliding, tobogganing, etc.

Made of seasoned hardwood, finished in natural and attractively striped. Wrought iron trimmings painted black.

Nos.	1SS	2SM
Length runners, feet	3	4
Width runners, inches	2½	2⅞
Spread, inches	14	16
Weight, each, lbs.	6	8
Per dozen	$40.00	$44.00

Six in a bundle. K. D.

SKIS AND TOBOGGANS

SKOOTER SKIS

The latest and most popular winter plaything. For use on ice, hard packed snow or in the deep snow. Every sidewalk, roadside, bank and hill offers an opportunity for hours of the keenest kind of sport The children cannot hurt themselves riding the Skooter Ski. They will get many thrills and hours of fun riding its smooth, speedy runners. Built to last for years—next to indestructible. Best grade high carbon spring steel main runner, full hardened steel secondary runner or foot plate Handle of strong hardwood. All metal parts finished in red enamel and handle finished natural and varnished. A beautiful, high quality article throughout.

Skooter Ski—Weight, each, — lbs. Each.....$2.00

SKEE-SKATES

PATENTS granted in the U. S. and Patents pending in other countries. Any infringements will be prosecuted.

Keeping the children happy in out-of-door pleasures means health and contentment. Skee-Skate sliding brings thrills, pep and vitality. Slip on the Skee-Skates and go. They save sole leather. Any child can put them on "in a jiffy" over shoes and rubbers.

Skee-Skates can be used on snow or ice covered hills and for sliding on frozen ponds, etc. For "Skeeing" or sliding down snow covered hills in standing position. Nothing to fix. No repairs. No sharpening bills. A thrill giver not a spill giver. Made from full planished cold rolled steel and nickel plated over copper plate. Toe strap holder and heel support are welded to the one-piece body portion and are substantially made thruout. Straps are ⅝ inch wide and 43 inches long and are considered the best web straps made.

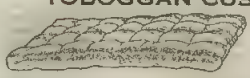
Skee-Skates—Weight, per pair, — lbs. Per pair..$2.00

TOBOGGANS

Strand's—These toboggans are made of hard maple, varnished natural finish on the top surface and set in with boiled oil underneath to make them slippery.

Length, feet, 4, 5, 6, 7, 8 and 10. Per foot.....$1.30

TOBOGGAN CUSHIONS



These cushions are of a quality that is plenty good enough for the purpose for which they are intended. They are filled with cotton, covered with best grade khaki covering and made up with 2-inch box.

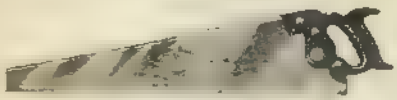
All made 15 inches wide.

Length, feet	4TC	5TC	6TC
Each	$3.60	$4.00	$4.75
Length, feet	**7TC**	**8TC**	**9TC**	**10TC**
Each	$5.00	$6.00	$6.75	$7.25

Open stock.

ATKINS SILVER STEEL SAWS

A Message to Hardware Dealers and Hardware Buyers



ATKINS NO. 400 HAND SAW

ATKINS NO. 53 HAND SAW

ATKINS NO. 51 HAND SAW

ATKINS NO. 4 TROWEL

ATKINS NO. 10 HACK SAW

Unless you are stocked with Atkins Silver Steel Saws and make daily sales of them, you will never know how profitable they are, and you owe it to yourself to find out something about these scientifically made, easy-running, fast-cutting saws that make friends for you.

Most any kind of a saw will cut and you can sell a few now and then on your reputation, but the results you achieve are not satisfying, therefore, why not sell *Atkins*—the saws that bring repeat orders, the saws that stay sold, the saws that are known the world over as,

"The Finest on Earth"

Write today for our complete new catalog and plans for making your store saw headquarters in your town

E. C. ATKINS & CO.

ESTABLISHED 1857 THE SILVER STEEL SAW PEOPLE

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Chicago	Portland, Ore.	Sydney, N. S. W.
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The Atlas Car & Manufacturing Company

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CLEVELAND, OHIO, U. S. A.

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New York.....Woolworth Bldg. Chicago.....53 W. Jackson Blvd.
San Francisco.....Wells Fargo Bldg.

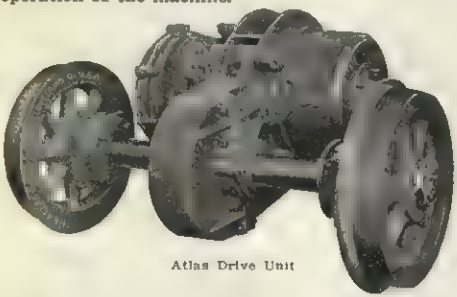
Engineers — Manufacturers

Products

Storage Battery Locomotives; Combination Storage Battery and Trolley Locomotives, Trolley Locomotives; Dump Cars and All Kinds of Industrial Haulage Equipment, also a small Gasoline Locomotive.

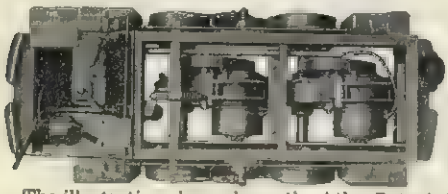
Atlas Drive Unit

Of all the mechanical features on a Storage Battery Locomotive, the drive unit is the most important, as upon it depends the continuous and efficient operation of the machine.



Atlas Drive Unit

All Atlas locomotives with the exception of type C have a patented drive unit which eliminates the objectionable cantilever effect on the gears and makes for longer life and higher efficiency. The axle gears are mounted BETWEEN the bearings to eliminate the twisting strains and the heavy oil tight housing which forms the gear case also supports the driving motor. As there is a bearing on each side of the heavy driving gears, the gears are held properly in mesh at all times and the case which encloses the gears acts as an oil reservoir to supply continuous and adequate lubrication to the gearing. This gear housing is much heavier than on other types of drives and has stood up so well in service as to earn the slogan "The Drive You Cannot Break." All gears are "Tool Steel."



The illustration above shows the Atlas Patented Driving Units installed in a type B locomotive. Note that each axle is driven by an individual motor.

Efficiency

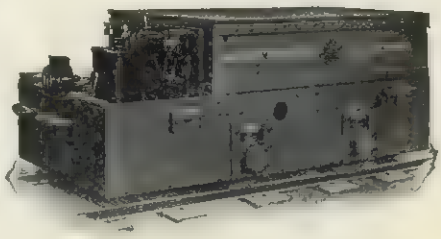
The high efficiency of Atlas locomotives is traceable to several features of the design. They have two motors with more power than most machines of equivalent weight; the gear ratio is scientifically chosen to show highest efficiency; the drives are ball bearing mounted throughout so as to reduce frictional losses to a minimum and to maintain the gears in the proper mesh until worn out; the parts are built of the best material obtainable, for instance, the gears are "Tool Steel" guaranteed to wear longer than any other gear made, and the "ATLAS PATENTED DRIVE UNIT" absolutely protects the gears and insures proper and adequate lubrication.

Types of Battery Locomotives

Atlas Storage Battery Locomotives are made in five standard types—A-B-C-D and F, to suit all usual conditions of haulage, but special machines can be designed and built to suit unusual conditions.

Type A

Type A has the frame outside the wheels which furnishes greater protection for the mechanism, and enables its adaptation to narrower track gauges than is the case where wheels are outside of the



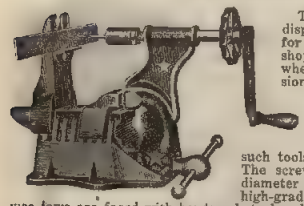
Type "A" Atlas Storage Battery Locomotive

frame. Built in sizes from 3 to 10 tons, and gauges 18 to 56½" depending upon the size of the machine. Heights 40" to 48". This machine has two driving motors, one driving each axle. ATLAS PATENTED DRIVING UNIT. Spur gear drive. TOOL STEEL GEARS.

COMBINATION VISES

Star.

Combined anvil, vise and pipe holder.



This is an indispensable tool for farmers, shops and homes where but occasional use for such tools is required. The screw is ⅞ inch diameter and made of high-grade steel. The vise jaws are faced with hardened steel and face of anvil is chilled, ground and polished. No springs to rust or break. The pipe jaws will hold pipe ¼ to 2 inches. All Star anvils and vises can be equipped with a drilling attachment as shown above.

Star—Combination anvil and vise. Weight, complete, 60 pounds. Each $8.00

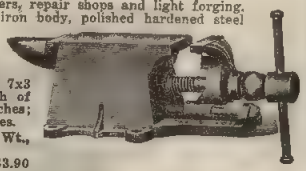
Drilling Attachment. Each 4.00

Vise and drilling attachment are packed separate.

Austin.

Combined Anvil, Vise and Pipe Holder.

For farmers, repair shops and light forging. Wrought iron body, polished hardened steel face; size, 7x3 inches; width of jaw, 3 inches; opens 4 inches.



No. 3C — Wt., 25 pounds. Each $3.90

One in a box.

SOLID BOX VISES

Standard.

Japanned forged steel body; polished tool steel, welded jaws; polished steel screw and sliding lever; flat steel tempered spring; malleable iron box and bench plate.

Nos.	30	35	40	45
Pounds	30	35	40	45
Jaws, in.	3½	3¾	4	4¼
Each	$11.00	10.00	10.50	11.00

Nos.	50	55	60	65
Pounds	50	55	60	65
Jaws, in.	4⅓	4¾	5	5
Each	$11.50	12.00	13.00	14.00

Nos.	70	80	85	90
Pounds	70	80	85	90
Jaws, in.	5¼	5⅓	5½	5¾
Each	$15.00	17.50	18.50	20.00

Nos.	95	100	110	120	125
Pounds	95	100	110	120	125
Jaw, inches	5¾	6	6	6½	6⅓
Each	$21.00	22.00	24.00	26.00	27.50

Columbian.

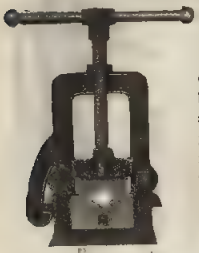
This wrought steel blacksmith vise is especially designed for those who wish a vise with larger jaws at a moderate price. Each leg is forged from one piece of steel. Painted black to prevent rust. Shipped loose with handle wired on to avoid damage in transit.

No. 35—Length of jaws, 4 inches; depth from top of jaw to top of box 3¼ inches; vise opens 3¾ inches; weight, each, 35 pounds. Each $10.00

One in a box.

MALLEABLE PIPE VISES

Extra Heavy.



Hinged.

These vises are constructed of a very high grade malleable iron, with steel screw and lever and tool steel pipe jaws. All parts of vises are made exceptionally heavy to stand severe strain. Polished jaws and handle, black japanned handle.

Nos.	B	C	D
Holds pipe, in.	⅛ to 2½	⅛ to 3	⅛ to 4½
Weight, lbs.	13	20	35
Each	$6.00	9.00	12.50

Each wrapped in burlap.

"Magic"

Hinged.

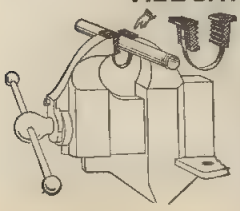
Made of high grade malleable iron, with steel screw and lever and tool steel pipe jaws. All parts of the vises are made exceptionally heavy to stand severe strain. Polished jaws and handle, japanned frame.

Nos.	110	111
Pipe, in.	⅛ to 2	⅛ to 2½
Weight, lbs.	4½	9
Each	$3.60	5.00

Nos.	112	113	114
Holds pipe, in.	⅛ to 3½	¼ to 4½	1 to 6
Weight, lbs.	15	19	36
Each	$7.50	11.00	23.50

Each wrapped in burlap.

VISE JAWS



With a set of these jaws one can make a common vise a pipe vise. Holds anything round, big or little. Fits any vise.

No. 25 — Malleable iron jaws with flat tempered steel spring, finished in black japan. Weight, per dozen, 5¾ pounds. Per dozen.....$4.00

Half dozen in a box with one mounted on counter display card.

CHAIN PIPE VISES

Vulcan.

These vises are unbreakable, compact, rapid in action and positive in gripping pipe. All are equally serviceable upon and suitable for fastening to bench or post. The smaller sizes are well adapted for carrying by hand or in tool bag.

Adjustment is quickly effected by slightly turning the screw and further quick adjustment is gained by engaging the projecting rivets of chain with a series of bosses on base.

They are made entirely of wrought steel; the drop forged jaws are of saw tempered steel for file sharpening. The hand-made chains are of the same quality as that used on the Vulcan chain pipe wrenches.

Nos.	1V	2V	4V
For pipe sizes, in.	⅛ to 2	¼ to 4	¾ to 8
Weight, each, lbs.	4	10	30
Each	$3.50	$7.50	$18.00

One in a box.

YANKEE VISES

Mounted on Swivel Base.

This is an entirely new feature in vises, and one that will be appreciated by tool-makers and machinists, where work can be rigidly held in a vise that can be used either on bench or [illegible] chine. The body and sliding jaw are of cast iron, with hardened steel faces. The sliding jaw extends through slot one inch wide in body of vise in one piece, fitted with two steel keys set in the same, thus securing a parallel movement, and so constructed as to cause very little wear.

The vise is accurately machined all over so it can be used on either side, or end, as well as on its base. A hardened steel block is provided with V-shaped grooves of various sizes for holding round or irregular shaped work in drilling, shaping, etc.

The swivel base on which vise is mounted, is easily and firmly locked or released by a short movement of lever on one side. The base is 4½ inches in diameter, has three bosses on under side to give a level bearing on bench.

No. 1993—Jaws 2¾ inches wide, 1⅞ inches deep and open 3¼ inches; extreme height, with swivel base, 5¾ inches; extreme length over all; 8¾ inches. Weight of vise and swivel base, 13½ pounds. Each.....$10.00

One in a box.

$3.98

The New Retail Price of the Famous

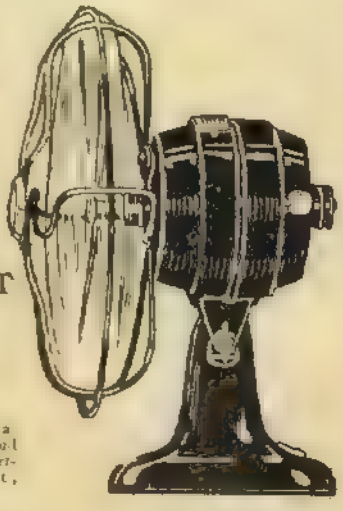
Polar Cub
ELECTRIC FAN

The most astounding announcement made the trade since the Polar Cub fan was first presented.

The 8-inch Polar Cub now retails at $4.95. A new ivory finished 8-in. Polar Cub at $6.50

Distributors now have complete information. Write for name of one nearest you.

Get your orders in early. There won't be enough for all.



THE A. C. GILBERT COMPANY

430 BLATCHLEY AVE.
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Polar Cub Fans retail in Canada at $5.95, $7.50 and $10.00. Send for full information to The A. C. Gilbert-Menzies Co., Ltd., 449 West King St., Toronto, Ont.

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631 Olive Street, ST. LOUIS, MO.

Manufacturers and Importers Since 1860 of

Engineering Supplies and Drafting Room Equipment

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"Featherweight" Mining and Mountain Transit

World Standard for Mine Use

The "Featherweight" Mining and Mountain Transit is an instrument of appealing design and construction doing with precision every type of work demanded by mining engineers. Aluminum alloy construction reducing its weight to only 11 pounds making it easy to carry in low headings, up and down ladders, etc.

TELESCOPE 6" Achromatic Erecting Dust Cap and Sunshade Object glass aperture 1¼". Magnifying Power 24 Diameters Rack and Pinion for focusing Eye Piece with Inverted Screw for focusing Stadia Hairs Sensitive 3-5" Spirit Level under Telescope, Clamp and Tangent Screw to Telescope Axis Close focusing Telescope

VERTICAL CIRCLE With Guard 3" Diameter graduations on Solid Silver to half degrees and numbered in quadrants 0 to 90 to each way Vernier reading to One Minute

HORIZONTAL CIRCLE 5" in Diameter, graduated on solid silver to half degrees and numbered with two rows of figures in opposite directions from 0 to 360. Two Double Verniers placed at 30 degrees from line of sight and reading to one minute Ground Glass Vernier shades. Clamp and tangent screw and two sensitive plate levels.

COMPASS—3½" Needle of Hardened and Tempered Steel Compass graduated to half degrees, numbered from 0 to 90 each way

LEVELING HEAD Phosphor Bronze solid construction with 4 Substantial Leveling Screws with ball and socket caps and dust caps to leveling screws Shifting plate with ⅝" shift

WEIGHT Instrument 11 pounds Extension Leg Tripod 8½ pounds Comes complete in mahogany carrying case with sunshade, plumb bob, adjusting pins, screw driver.

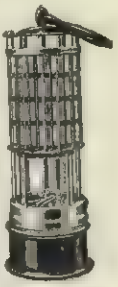
Send for Free Catalog

Mining, Engineering Supplies

Our new Catalog No E272 showing our most complete and complete line of Mining Specialties and Engineering Equipment and Supplies is yours for the asking Write for it today

Safety Mine Lamp—American Pattern—The Best

Detects Gas of 1%



An excellent lamp for the general use that has been approved by state authorities throughout the country. Burns naptha as fuel giving 10 hours of continuous clear illumination, and will stand the roughest kind of service at lower maintenance cost than any other safety lamp on the market. Tested in high velocity currents up to 2500 feet per minute. Shows presence of gas of 1%. Equipped with key or magnetic lock. Height, 11 inches; weight, steel lamp 3 lbs., 4 oz.; aluminum lamp 2 lbs., 8 oz.

Short & Mason Anemometer

Accuracy and Precision

This instrument automatically registers the velocity of currents of air in coal mines, ventilators, flues, public buildings, etc. It is exceedingly sensitive at low speeds and will stand without injury or disarrangement velocities up to 3,000 feet per minute. All parts which have heretofore made these instruments uncertain have been eliminated—you can absolutely rely on the Short & Mason importation.

Mine Spads—Perfectly Made

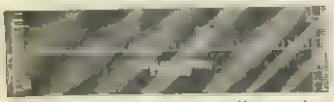
Superior to Home Made Devices—Non-Corrosive

The cost of absolutely true mine spads is now so cheap that it is impractical to attempt to make your own. We offer the profession true spads precisely made from special rolled steel and rendered non-corrosive, an important feature. Made in three sizes and styles as shown, the first two being made to drive into wooden pegs in mine roof, the other to drive direct into the tunnel roof.

Side Note or Plotting Scale

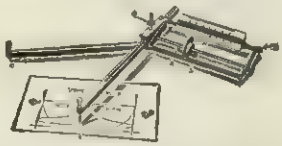
Excellent for Mine Map Work

Every mining engineer should be equipped with this side note or Plotting Scale for use in laying off rooms, headings, and entries on mine maps. No other scale will offer this same efficiency and utility. It is made of heavy clear celluloid with the center line graduated to 10ths; one beveled edge to 50ths, the other to 30ths. This offers the needed scales with the most convenient of arrangements. Affords a wonderful convenience and time saving.



Mining Engineers' Planimeter

Accurate—Time Saving



This Mining Engineers' Planimeter operates on new and more efficient principle than most instruments of its kind. Read direct from indicator diagram. Gives area of regular and irregular circles or diagrams in square inches, feet and yards without any computation. Saves time and speeds up your work. Size 1½x3½x9½ inches. Comes complete in morrocco case with directions. Can be carried in coat pocket. Descriptive circular sent upon request.

Wolf Safety Lamp Company of America, Inc.

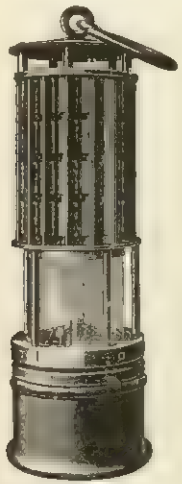
220-224 Taaffe Place, BROOKLYN, N. Y.

Miners' Safety Lamps

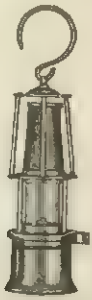
Products Made in U. S. A.

Wolf Miners' Safety Lamps Burning Naphtha, Vegetable Oil and Acetylene. Wolf's Open Carbide Lamps for Hand, Cap and Trip. Tools and Accessories for all types of lamps. Newton Oiling Device for Mine Car Wheels.

Wolf Baby Safety Lamps



No. 100 with Magnetic Lock.
No. 131 with Key Lock



No. 600

No. 602c

No. 602

Baby Wolf Safety Lamps are equipped with key-lock and round wick only, but also can be furnished with magnetic lock at an extra charge of 50c. Upon special request these lamps are also furnished without any lock arrangements.

Small Watch Fob Safety Lamps

Made Exactly as the large Lamps, $1.00 ea. postpaid.

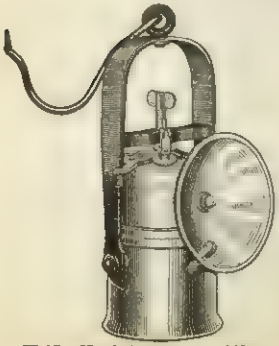
Complete Descriptive Catalog Upon Request

No. 201 with Magnetic Lock.
No. 232 with Key Lock.

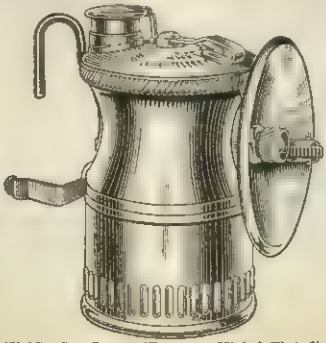
Standard Wolf Safety Lamps are furnished in all Aluminum or in Steel with Brass Trimmings. On special order No. 100 and 131 Lamps also in Brass.

Baby Wolf Safety Lamps are only made in Aluminum, which makes this type very light in weight (No. 600, for instance only weighs twelve ounces and is 7¼ inches high.) Lamps No. 100 and 131 can be equipped with round or flat wick, Nos. 201 and 232 with flat wick only. **Lamps No. 100 in Steel with Brass Trimmings or in Aluminum with round or flat wick are approved by the United States Bureau of Mines, their Approval Nos. 204, 205 and 206.** Under this approval Steel or Brass Gauzes are permissible.

Wolf Carbide Lamps
for mines where open flame lamps are permissible.
(Ask for special circular illustrating other types).



Wolf's Hand Lamp (No. 905a)



Wolf's Cap Lamp (Brass or Nickel Plated)

Wolf's Trip Light with white or red railroad lens.

UNION CARBIDE SALES COMPANY

NEW YORK
Carbide and Carbon Bldg.
30 East 42nd St.

CHICAGO
Peoples Gas Bldg.

SAN FRANCISCO
Balfour Bldg.

We Have Union Carbide Warehouses in 175 Cities

"Miners Lamp" Union Carbide

Union Carbide For Mine Lamps

"MINERS' LAMP" UNION CARBIDE—Packed in 100-pound drums; 25-pound drums; 2-pound cans—24 cans to the case; 10-pound cans—6 cans to the case.

Manufactured by Union Carbide Company, the Original Producers of Commercial Calcium Carbide and today the world's largest makers of this product.

"MINERS' LAMP" is a size of UNION CARBIDE specially adapted for use in Miners' Carbide Lamps.

Because of its special selection, uniform high gas yield, special sizing and screening, and freedom from dust, "Miners' Lamp" Union Carbide is the most economical and satisfactory Carbide for use in Miners' Lamps.

"Miners' Lamp" Union Carbide will keep indefinitely if protected from air and moisture.

UNION CARBIDE—WORLD'S BEST QUALITY—HIGHEST GAS YIELD.

Union Carbide has for more than twenty-five years been recognized as the World's Standard for Quality in Carbide.

The use of Union Carbide results in greatest satisfaction and lowest cost, because:

It has the greatest gas content and is always uniform and dependable in quality.

Union Carbide is always the same—always highest grade and most carefully selected.

When using highest gas yielding Carbide, lamps and other apparatus require recharging less frequently.

Considerable time and labor are saved by the smaller number of chargings. The time saved can be applied to other duties.

The wear and tear on the lamps, or other apparatus, is lessened by reducing the number of rechargings.

There is a smaller quantity of residue to handle per unit of gas consumed, when highest gas yielding Carbide is used—another worth-while saving in time and labor.

When Carbide having the highest gas value is used, a saving is effected in the cost of transportation and handling charges in proportion to the amount of gas actually generated.

The correct uniform sizing and careful screening of UNION CARBIDE assist greatly in the economical, efficient and uninterrupted operation of lamps and generators.

Because of the faithfully sustained, always dependable quality of Union Carbide, it is easy for the Carbide user to estimate his Carbide requirements from time to time.

What Union Carbide Is Used For

In addition to being used by more than a million miners in cap lamps, hand lamps and other portable and stationary mine lighting equipment, Union Carbide, crushed to the several regular commercial sizes, is extensively used for the following purposes: The lighting of country buildings of all types and sizes; cooking; the oxy-acetylene process for welding and cutting all metals; contractors' torches and flare lights; lighthouses and buoys; train, locomotive, railroad signal and station lighting; motor vehicle lighting; life saving equipment; fire departments; physicians' lamps; scientific and laboratory purposes; searchlights; moving pictures; stereopticons; hunting and trapping, fishing, camping and boat lighting; gathering cotton and small fruits at night; night operation of tractors and other farm implements; steam boiler and other inspection work; and scores of other uses.

Our Blue and Gray Package

Union Carbide is always packed in distinctive Blue and Gray containers. The excellence of our package is in keeping with our aim diligently to protect the interests of users of our product in the matter of Carbide quality from the time it is packed at the Works until it is consumed by the user.

Union Carbide will keep for years in the original package without deterioration.

The Blue and Gray package is, therefore, a symbol denoting: best grade Carbide; highest gas value; uniform dependable quality, and purest gas.

Our Nation-wide Distributing System

For the convenience and economy of Carbide users we carry large stocks of Union Carbide in our own warehouses, at 175 convenient shipping points throughout the country.

Shipments are made the same day that orders are received.

Directory of Union Carbide Sales Company's Warehouses Appears on Opposite Page

COASTER WAGONS

BADGER

Bodies constructed of well seasoned hardwood, removable box. Extra heavy wheels with shaved spokes; ¾x1½-inch rock elm rims, with ¾x⅛-inch wrought steel welded and shrunk on tires, malleable iron hub caps and bands; gear of No. 1 selected stock, securely braced to body with heavy irons, 9-16 inch round steel axles. Steering gear of extra heavy malleable iron and hardwood, body and gear varnished on natural wood, decorated in red and black. Wheels painted bight red.

Nos.	1303	1304	1305
Size of body, inches.....	14x32	16x36	18x40
Diameter of wheels, inches	10	10	10
Per dozen	$105.00	$117.50	$134.50

Nos. 303 and 304 one-sixth dozen in a carton.

No. 305 one-twefth dozen in a carton.

EXPRESS WAGONS

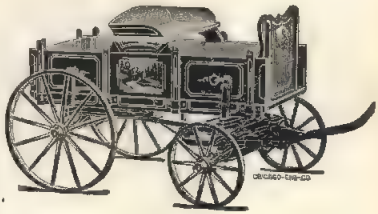
Standard—Steel.

The body is painted a bright vermilion color, neatly striped and varnished. With the exception of the bottom board, it is made of best quality of sheet steel; the corners are round and the top being bent over a wrought iron rod makes it very firm. It is much lighter, neater and more durable than a wooden body of the same dimensions. It has patent all iron gear and wheels.

Nos.	02	1	3
Body, inches	11x22	12x26	14x30
Wheels, inches	8	10	12
Per dozen	$32.70	46.00	55.00

Sixth dozen in a carton.

MINATURE FARM WAGONS



No. 25—Body 17x36, with oak frame. The sides and ends can be taken off, leaving the bed with stakes. The gearing is made like a farm wagon, having bent hounds and adjustable reach. All parts are strongly ironed and braced; wheels 14 and 20 inches, heavy welded tires, square and staggered spokes, with hub boxes and bands; has seat and tongue. Handsomely painted, ornamented and striped. Weight, about 60 pounds. Each....$17.20

One in a crate.

PRODUCERS DISTRIBUTING CORPORATION

"The Immortal Drama of BARBARA FRIETCHIE"

IN all American history there is no more appealing character than that of Barbara Frietchie, immortalized in poem and legend, and brought to life on the stage by lovely Julia Marlowe in the Clyde Fitch play based on this thrilling episode of the Civil War.

It is a significant fact that the greatest photoplays of all time have been stories told against a background of historical events. "The Birth of a Nation," "Quo Vadis," "The Covered Wagon," "Scaramouche" and "America" owe as much of their success to the fact that their superstructure of dramatic interest is founded on history, as they do to their own intrinsic dramatic worth.

And now "Barbara Frietchie" comes to the screen in a sumptuous and stupendous photoplay. "Barbara Frietchie" is the real heart throb in that epochal drama of American history played in the bloody fields of Vicksburg, Gettysburg and Appomattox. It typifies that poignant tragedy that was in the hearts of the noble womanhood of Civil War days, while their men fought—brother against brother.

Florence Vidor, who stars in the title role of this epoch making drama, was chosen to portray this great heroine because she possesses, in a superlative degree, that innate charm and beauty typical of the best in American womanhood. Visually and histrionically, Miss Vidor is the ideal "Barbara Frietchie," and her interpretation of the role places it among the greatest characterizations in the history of the photodrama.

In Edmund Lowe, who plays "Captain Trumbull," the male lead, Miss Vidor has the support of one of the most finished and virile actors on the screen today. Mr. Lowe is starring this season in the great Channing Pollock Special "The Fool."

LAMBERT HILLYER, Director

"Barbara Frietchie" was produced under the personal direction of Lambert Hillyer, who has directed some of the greatest film successes of the past five years, including "The Spoilers," the William S. Hart series of box office successes and many of the biggest specials made at the Culver City Studios for First National and Famous Players.

BARBARA FRIETCHIE *Cast*

Barbara Frietchie . . . . Florence Vidor

Captain Trumbull	Edmund Lowe	Col. Negly	Lewis Fitzroy
Col. Frietchie	Emmett King	Sue Royce. .	Gertrude Short
Jack Negly . . .	Joe Bennett	Mammy Lu .	Mattie Peters
Arthur Frietchie	Chas. Delaney	Colored Man	Jim Blackwell
		Fred Gelwex	Slim Hamilton

Other Characters

Sally Negly, Laura Royce, Mrs. Hunter, Tim Greene (soldier), Dr. Hal Boyd, Edgar Strong, Corporal Perkins and a Sergeant, Little Coon.

Director—Lambert Hillyer

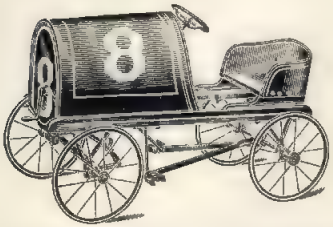
Clyde Fitch's great story of "BARBARA FRIETCHIE," has established itself as a success on Broadway and in every other great theatrical center and for many seasons has been the most popular seller for amateur shows and stock companies. The name "Barbara Frietchie" is a box office name to every man woman and child.

For release in August—Now Booking

Foreign Distributor—Wm. Vogel Distributing Corp.

JUVENILE AUTOMOBILES

The "Barney Oldfield Racer"

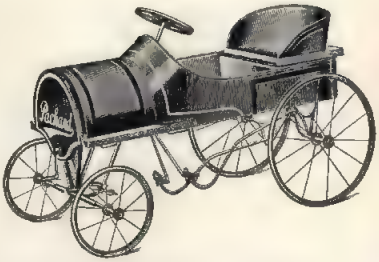


13½x38-inch body, made of hardwood and sheet steel, finished in green with 15½-inch hood, finished in red. Seat upholstered in leatherette, 6-inch wood rim steering wheel, axles, ⅞-inch. Knuckle joint front axle. Wheels, 12 inches, with ½-inch rubber tires.

No. 388—Shipping weight, about 50 lbs. Each..$19.60

One in a crate.

The "Packard"



15x36-inch body, made of hardwood and sheet steel, finished in red, striped and stenciled in gold. Equipped with ratchet starting crank. Wheels, 10 and 16 inches, with ½-inch rubber tires. Wheels and running gear finished in black baked enamel. Seat is adjustable.

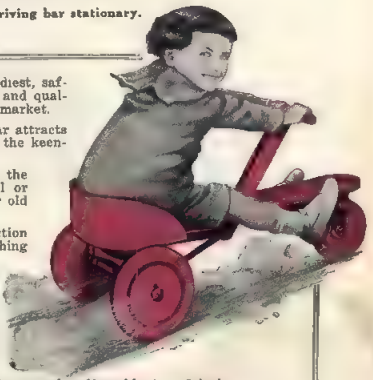
No. 371—Shipping weight, 45 pounds. Each....$14.80

One in a crate.

SCOUT RUNNERS

THE ONE REAL HAND CAR

It has no dead center. Is safe and speedy. Coasts with driving bar stationary.



Positively the most attractive, most durable, speediest, safest, and last word in novelty of design, construction and quality of any similar type of child's vehicle now on the market.

It is a proven fact that the Scout Runner hand car attracts the immediate attention of the youngster as well as the keenest interest of the prospective purchaser.

The no dead center feature of this car insures the smoothest and easiest operation possible. The pull or push on handle bar from any position by a two year old child will start car in motion.

The simple drive mechanism and sturdy construction guarantee equal life and wear to all parts alike. Nothing to get out of working order.

Adjustable as to length. By merely reversing front fork or removing same to other hole, foot reach may be shortened or lengthened to suit any child.

Length of seat board 31 inches, width of seat 11 inches; wood wheels, 6¾ inch front, 8 inch rear; 7-16-inch cold rolled steel axle; brass bushings in handle bar and wheels; one piece steel front fork; foot reach, adjustable 1 to 6 inches.

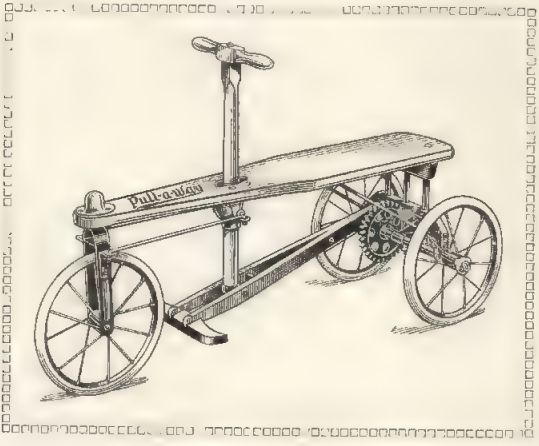
Scout—Bright red body and wheels; embossed stenciling in deep yellow; high grade lustre finish. Each $7.80

Packed six to a crate, partially knocked down. Shipping weight 110 pounds.

2434F

THE PULL-A-WAY

Town and Country.



Introducing a brand new item in the wheel goods line, the TOWN and COUNTRY PULL-A WAY, a muscle developer for every sinew in the body, for the boy or girl between the ages of four and twelve years.

ACTION—Combines a hand and foot drive, giving a push and pull action similar to the stroke in a Varsity Shell.

STEERING—Steers from the hand so as not to in any way interfere with the full driving action.

SPEED—The PULL-A-WAY is so geared that it can be run at a relatively high speed—9 foot advance in one stroke.

WHEELS—The PULL-A-WAY is equipped with HUBBARD SILENT WHEEL standard equipment on TOWN and COUNTRY Wagons.

TIRES—The famous TOWN and COUNTRY Cord Tire is standard equipment on the PULL-A WAY.

COMPARISON AND SUMMARY—We recommend the TOWN and COUNTRY PULL-A-WAY as the latest type of muscle builder; combining with the exercise feature, a thoroly enjoyable plaything for the youngster. As compared with other hand carts it can be definitely said it is different; superior in construction and design, making its use distinct enjoyment.

Pull-A-Way—Weight, each, — pounds. Each..... $11.25

LANTERN SLIDES FOR ADVERTISING

No. 3SB.

No. 1SB.

No. 5E.

No. 2SB.

No. 6E.

CROSS CUT SAWS

BAY STATE

No. 205A—Tuttle Tooth

Special quality steel, thin back, 14 gauge at tooth edge, 16 gauge at back. 5 in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	5	6	7
Each	$4.50	5.00	5.50

NARROW CROSS CUT SAWS

BAY STATE

Hollow Back, Perforated Lance Tooth.

No. 214—Special quality steel, 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$3.75	4.00	4.25

No. 0214—Special quality steel, two gauge taper. 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$4.00	4.25	4.50

ONE MAN CROSS CUT SAWS

SIMOND'S

No. 222—Perforated Lance Tooth

Crucible cast steel, straight taper ground, beech handle and supplementary handle.

Length, feet	3	3½	4
Weight each, lbs.	3¼	4	4¾
Each	$4.00	4.25	4.50

BAY STATE

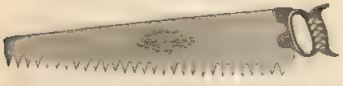
No. 231—Tuttle Tooth

Special quality steel, carefully ground, beech handle and supplementary handle

Length, feet	3	3½	4
Weight each, lbs.	2½	3	4½
Each	$2.75	3.25	3.75

HAND ICE SAWS

DISSTON



For use on ice wagons, in cold storage houses, etc., 15 gauge crucible steel deep tooth blade, length 26 inches, width at heel 5⅝ in., handle riveted on. Per dozen

No. 75—Japanned malleable iron handle, weight per dozen 36 pounds $24.00

One sixth dozen in a box.

HACK SAW FRAMES

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubberoid handle.

Per dozen

No. 1048—Adjustable for blades 8 to 12 in., depth of cut 2½ in., **without blade**, weight per dozen 13 lbs. $15.00

One in a box.

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubber composition handle.

Per dozen

No. 1096—Adjustable for blades 8 to 12 in., depth of cut 3⅛ in., **without blade**, weight per dozen 22 lbs. . . . $21.00

One in a box.

ATKINS PISTOL GRIP

High grade steel frame, ⅝ in. wide, ⅛ in. thick, back reinforced with steel sheath, nickel plated finish, hard black rubber handle

Per dozen

No. 11—Adjustable for blades 8 to 12 in., depth of cut 4 in , **with blade**, weight per dozen 20 lbs. $21.00

One in a box.

ATKINS EXTENSION

High grade steel, heavily nickel plated and highly polished, enameled wood handle will face in four directions.

Per dozen

No. 9—Adjustable for blades 8 to 12 in., **without blade**, weight per dozen 13 lbs. $6 00

One in a box.

ATKINS

Black japanned iron frame, black wood handle.

Per dozen

No. 8—Length 8 in., blade can be faced in four directions, **without blade**, weight per dozen 20¾ lbs. $4.80

One half dozen in a box.

CROSS CUT SAWS

BAY STATE

No. 205A—Tuttle Tooth

Special quality steel, thin back, 14 gauge at tooth edge, 16 gauge at back. 5 in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	5	6	7
Each	$4.50	5.00	5.50

NARROW CROSS CUT SAWS

BAY STATE

Hollow Back, Perforated Lance Tooth.

No. 214—Special quality steel, 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$3.75	4.00	4.25

No. 0214—Special quality steel, two gauge taper. 3¾ in. wide at center.

Length, feet	5	5½	6
Weight each, lbs.	3½	4	4½
Each	$4.00	4.25	4.50

ONE MAN CROSS CUT SAWS

SIMOND'S

No. 222—Perforated Lance Tooth

Crucible cast steel, straight taper ground, beech handle and supplementary handle.

Length, feet	3	3½	4
Weight each, lbs.	3¼	4	4¾
Each	$4.00	4.25	4.50

BAY STATE

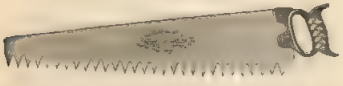
No. 231—Tuttle Tooth

Special quality steel, carefully ground, beech handle and supplementary handle

Length, feet	3	3½	4
Weight each, lbs.	2½	3	4½
Each	$2.75	3.25	3.75

HAND ICE SAWS

DISSTON



For use on ice wagons, in cold storage houses, etc., 15 gauge crucible steel deep tooth blade, length 26 inches, width at heel 5⅝ in., handle riveted on. Per dozen

No. 75—Japanned malleable iron handle, weight per dozen 36 pounds $24.00

One sixth dozen in a box.

HACK SAW FRAMES

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubberoid handle.

Per dozen

No. 1048—Adjustable for blades 8 to 12 in., depth of cut 2½ in., **without blade**, weight per dozen 13 lbs. $15.00

One in a box.

RED DEVIL PISTOL GRIP

Strong steel frame, back reinforced with steel sheath, nickel plated finish, black rubber composition handle.

Per dozen

No. 1096—Adjustable for blades 8 to 12 in., depth of cut 3⅛ in., **without blade**, weight per dozen 22 lbs. . . . $21.00

One in a box.

ATKINS PISTOL GRIP

High grade steel frame, ⅝ in. wide, ⅛ in. thick, back reinforced with steel sheath, nickel plated finish, hard black rubber handle

Per dozen

No. 11—Adjustable for blades 8 to 12 in., depth of cut 4 in , **with blade**, weight per dozen 20 lbs. $21.00

One in a box.

ATKINS EXTENSION

High grade steel, heavily nickel plated and highly polished, enameled wood handle will face in four directions.

Per dozen

No. 9—Adjustable for blades 8 to 12 in., **without blade**, weight per dozen 13 lbs. $6 00

One in a box.

ATKINS

Black japanned iron frame, black wood handle.

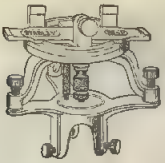
Per dozen

No. 8—Length 8 in., blade can be faced in four directions, **without blade**, weight per dozen 20¾ lbs. $4.80

One half dozen in a box.

SURVEYING AND ENGINEERING INSTRUMENTS

LEVELING STANDS



No. 48

Stanley Leveling Stand. For determining levels from a given point to one at a distance. Can be attached to a stake and adjusted to a horizontal position even though the stake may not be exactly perpendicular.

No. 48—Leveling Stand, Nickel Plated, Length 4½ inches, Width 3½ inches, for Wood Levels ..... Each, $3.64

Packed—One in a Box.

Nos. 425 and 426.

Beckmann

Contractors' and Builders' Levels, for bricklayers, millwrights, farmers, landscape gardeners, etc. 11¼ inch Telescope, magnifying power 18 diameters, with Rack and Pinion Movement to objective, Dust Cap Sun Shade and Adjustable Eye-piece for focusing cross-hairs. Graduated Level Vial tells slightest variation after leveling up.

No. 425—Complete with Plumb Bob, Adjusting Pins, Metal Trivit and Hardwood Tripod..... Each, $90.00

No. 426—Same as No. 20, except with 4 inch Horizontal Circle, graduated to degrees and numbered 0 to 90 each way, with vernier reading to 5 minutes. Circle is movable for purpose of setting same at zero at any given point..... Each, 97.50

Packed—Each Instrument in a Neat Hardwood Box.

No. 400.

No. 405.

Beckmann

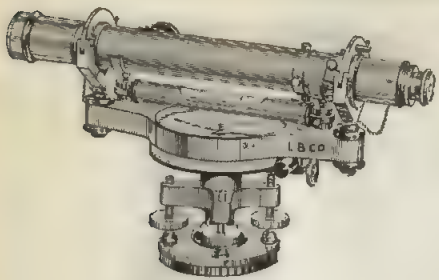
Architects' Levels, especially designed for leveling walls, laying out angles, giving lines and levels for buildings, grading streets, sewers, drains, etc. 12 inch Telescope, magnifying power 20 diameters, with 1¼ inch Aperture, Rack and Pinion Movement to objective, Dust Guard Sun Shade, Dust Cap and Adjustable Eye-piece for focusing cross hair. Graduated Level Vial tells slightest variation after leveling up. Horizontal Circle, 4½ inch, graduated to degrees and numbered 0 to 90 each way, with vernier reading to 5 minutes. Circle is reversible for the purpose of setting same at zero at any given point. Has Four Leveling Screws.

No. 400—Complete with Plumb Bob, Adjusting Pins, Metal Trivit and Hardwood Tripod..... Each, $112.50

No. 405—Convertible Architects' Level, same as No. 400, except with a patent arrangement by which vertical sights to the extent of 45 degrees in either direction, and horizontal angles between two points not in the same plane can be taken..... Each, 138.75

Packed—Each Instrument in a Neat Hardwood Box.

ARCHITECTS' LEVELS



No. 411.

Architects' Wye Level With Compass

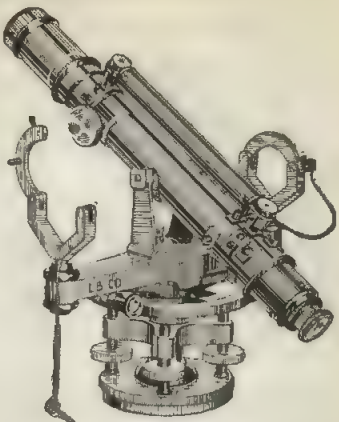
An instrument adapted for various kinds of leveling work as well as for land surveying where the stations are not too far apart. The engineer or surveyor who does not wish to go to the expense of buying a Surveyor's Transit will find this level very serviceable in determining the bearing of lines or measuring angles with the needle. It is also useful in the grading of streets, for irrigation ditches, sewers, drains, etc. It is constructed throughout of the best phosphor bronze metal.

Telescope. 12 inches long, power 20 diameters, with dust cap, dust guard and sunshade. Object Glass 1⅛ inch aperture. Eye-piece erecting. Shortest focus of telescope 6 feet from center of instrument or plumb bob. Spirit Level ground to a sensitiveness of 90 seconds of arc per graduation. Level tube is adjustable vertically and horizontally.

Level Bar with Compass. Phosphor bronze. Compass Needle 3 inches long, needle circle divided to half degrees on raised ring and numbered 0 to 90 each way. Compass and needle circle silvered.

Horizontal Limb. Four inches in diameter, silvered, graduated to degrees and numbered 0 to 90 each way with vernier reading to 5 minutes. Circle movable for setting it at zero at any given point.

No. 411 Architect's Wye Level with Compass, with Improved Clamp and Tangent (slow motion screw) to facilitate setting the cross hairs on a given point . . . . . Each, $150 00



No. 406.

Leveling Head. Of rigid design, with long bronze spindle. Four leveling screws. Clamp screw to spindle.

Finish. Gold and Gun Metal.

Tripod No. 51. Plain hardwood legs of straight-grained white ash. Bolts have Wing Nuts so they can be tightened by hand. Metal Cap for protecting threads to which level is fastened.

Weight. Of instrument only, 6¾ lbs. with Case, 11½ lbs. Tripod only, 6¾ lbs. Shipping weight with tripod, for domestic shipment, 27 lbs.

Equipment. Mahogany finished Case with lock and strap. Metal Trivet for setting up the instrument where a tripod cannot be used, plumb bob, sunshade, adjusting pins and book of information on uses and adjustments.

Architects' Convertible Wye Level With Compass

The No. 416 is similar in construction and description with the No. 411 but has the added feature of a Tilting Device. This attachment is constructed with a small standard having an adjustable horizontal bearing, which being permanently fastened to the middle of telescope secures the accuracy of the cross hairs while telescope is being tilted. The standard is fastened to the level bar by means of a rigid arched bridge which spans the compass, but is so constructed that it does not interfere with the reading of the needle. The bridge is removable and is carried in the box when the instrument is used for leveling. Telescope can be changed from a horizontal to a tilting position in 20 seconds.

No. 416—Architect's **Convertible** Wye Level with Compass (like No. 411), with Improved Clamp and Tangent (slow motion screw) to facilitate setting the cross hairs on a given point. . . . . Each, $167.50

Architects' or Builders' Convertible Wye Level

By the addition of the special improved device this telescope can be tilted 10 degrees in either direction. This is of great advantage to the Architect Builder, Millwright and Roadbuilder, who wishes to do transit work where the greatest accuracy is not required and who does not want to go to the expense of purchasing a Builder's Transit. With this level horizontal angles can be read between points not in the same plane, vertical lines correctly prolonged, objects sighted above or below the horizontal plane, stakes easily set, etc.

Telescope. 12 inches long, power 20 diameters, with dust cap, dust guard and sunshade. Object Glass 1¼ inch aperture. Eye-piece erecting. Shortest focus of telescope 6 feet from center of instrument or plumb bob. Spirit Level ground to a sensitiveness of 90 seconds of arc per graduation. Level tube is adjustable vertically and horizontally.

Tilting Device. This attachment is constructed with a small standard having an adjustable horizontal bearing, which being permanently fastened to the middle of telescope secures the accuracy of the cross hairs while telescope is being tilted. Telescope can be changed from a horizontal to a tilting position in 10 seconds.

Level Bar. Phosphor bronze of neat pattern.

Horizontal Circle. 4½ inches in diameter, silvered, graduated to degrees and numbered 0 to 90 each way, with vernier reading to 5 minutes. Circle movable for setting it at zero at any given point.

Leveling Head. Of rigid design with long bronze spindle. Four leveling screws. Clamp screw to spindle.

Finish. Gold and Gun Metal.

Tripod No. 50. Plain hardwood legs of straight-grained white ash. Bolts have Wing Nuts so they can be tightened by hand. Metal Cap for protecting threads to which level is fastened.

Weight. Of instrument only, 6 lbs.; with Case, 10¾ lbs. Tripod only, 6¾ lbs. Shipping weight with tripod, for domestic shipment, 26 lbs.

Equipment. Mahogany finished Case with lock and strap. Metal Trivet, for setting up the instrument where a tripod cannot be used, plumb bob, sunshade, adjusting pins and book of information on uses and adjustments.

No. 406— Architect's or Builder's Convertible Wye Level, with Improved Clamp and Tangent (slow motion screw) to facilitate setting the cross hairs on a given point . . . . . Each, $142.50

Architects' or Builders' Wye Level

No 401—Architect's or Builder's Wye Level, (like No. 406) with Improved Clamp and Tangent (slow motion screw) to facilitate setting the cross hairs on a given point, but **without the Tilting Device**. . Each, $120.00

BEE-VAC
ELECTRIC CLEANER

The World's Lowest Priced Standard Quality Cleaner

CONSUMER $39.75 PRICE

Just Ask Your Customers "WHY PAY MORE"?—that's All!

The Bee-Vac is Sold Only Through Jobbers

Nationally Advertised—Nationally Known Internationally Used

The *Bee-Vac* has been well advertised for years—and our present National Advertising plans are on a larger, more impressive scale than ever. It is a well established cleaner of proven reputation. From coast to coast, from border to border, the *Bee-Vac* is the favorite of the largest number of retail merchants.

Stop Costly Demonstrations

The *Bee-Vac* LOOKS its quality! An explanation of its *exclusive* features, and mention of its startlingly low price, closes the sale right in your store just like any other merchandise. A *Bee-Vac* sale, therefore, is *all* profit, because there is no time or effort wasted in costly competing demonstrations.

Figure Your Profits for Yourself

By buying through your jobber you never have money tied up in stock. You can get one *Bee-Vac* or one hundred, promptly, as you need them. Prices, lots of one to five, $27.00 each; six or more, $25.75 each. Attachments (which retail at $9.50 and are in big demand) are only $6.50 per set. Figured on a basis of quicker, easier, larger sales, these prices give you "*some*" profit!

Ask Your Jobber About the Bee-Vac Today.

BIRTMAN ELECTRIC COMPANY

Building Better Cleaners Since 1909

Lake and Desplaines Streets Dept. B 97 **CHICAGO, U. S. A.**

CORN PLANTERS

BUCKEYE ROTARY

Hardwood body, wooden grips, natural finish, 10x4x5 in japanned iron hopper. Has the rotary drop which insures great regularity. Four feed cups are at all times exposed to the corn, thus giving four chances to fill where any other planter has only one Feed cups are round, thus presenting no angles for corn to lodge in. The number of grains fed is regulated by changing wheels

Per dozen

Buckeye—34 in. long, weight per dozen 100 lbs $33.00

One half dozen in a crate

SEED SOWERS

CYCLONE

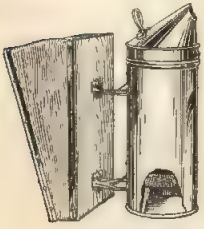
Sows all variety of farm seed that can be sown broadcast, slope feed board, automatic feed adjustment, positive force feed, quickly adjusted for different seeds, flow of seeds can be started or stopped instantly by touch of a lever, adjustable triple gears, distributing wheel of solid tin, frame of poplar, heavy duck seed bag, shoulder strap

Per dozen

Cyclone—Capacity of bag ½ bushel, weight per dozen 45 lbs. $30.00

One quarter dozen in a box.

BEE SMOKERS



CONQUEROR

Metal legs and metal binding, turned edges, substantially made fire grate with an abundance of holes for draft, removable nozzle, burns any fuel.

Each

Conqueror — 3x7 in. fire pot $1 50

One in a carton.

LITTLE WONDER

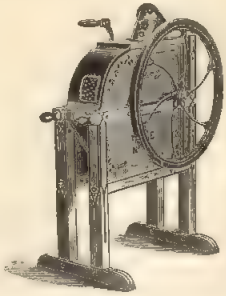
Metal legs and metal binding, turned edges substantially made fire grate with an abundance of holes for draft, removable nozzle, burns any fuel

Each

Little Wonder—3x5½ in. fire pot $1.25

CORN SHELLERS

IMPROVED EAGLE



One Hole

Best grade of timber used in the construction. Securely bolted together, painted and finely striped. Has heavy steel spoke balance wheel, light running inside gearing and adjustable spring to receive and shell any size ear of corn.

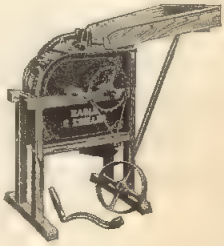
43 in. high, 20x28½ in. floor space.

Each

No. 3—One hole, without fan $24.00
No. 3F One hole, with fan attachment 28.00

Weight each about 130 pounds.

EAGLE "C"



Two Hole, For Hand or Power

Hardwood frame, nicely painted and varnished, steel shafts, heavy steel spoke balance wheel, speed of fly wheel about 350 revolutions per minute, capacity 300 to 400 bushels per day.

48 in. high, 30x60 in floor space.

Each

Eagle "C"—Complete with fan, feed table, crank and pulley, weight each 260 lbs. $48.00

CORN SHELLERS

BLACK HAWK

Malleable iron frame, hopper, separator and crank, extra long fully chilled bearings.

Clamps to any barrel or tub.

	Per dozen
Black Hawk — Capacity 8 to 14 bu. per hour, weight per dozen 180 lbs.	$36.00

Open stock.

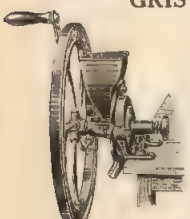
RED CHIEF

Malleable iron frame and hopper, 7¼ in. sheller disc with projecting teeth, steel axle, adjustable to shell any size ears, fastens to side of box or bin.

	Per dozen
Red Chief—Capacity 8 to 12 bushels per hour, weight per dozen 132 lbs.	$30.00

Open stock.

GRIST MILLS



APACHE

Large malleable iron fly wheel with steel spokes, extra large hopper, ball bearings, adjustable screw regulates grinding from the coarsest feed to the very finest, large wing nuts on bolts hold it firmly on table or stand.

The grinding plates can be taken out easily for cleaning or replacing. They are made of special metals which will last for years.

	Each
Apache—Black enameled finish, 19 in. diameter fly wheel, size of hopper 6x4 in. by 6 in. deep, weight each 35 lbs	$7 50

BLACK HAWK

Long malleable iron crank, all bearings are chilled, grinding blades are made of hardest and strongest metals. Can be adjusted to grind either fine or coarse by simply tightening or loosening two thumb screws.

Will grind corn into meal, hominy and chicken food. Grinds wheat into graham flour or will crack it for breakfast foods. Grinds beans, coffee, spices, salt, sugar, etc. Can be attached to table or bench, bolts and wrench with each machine.

	Each
Black Hawk—Strong grinding burrs, chilled bearings, finished in black enamel with bronze trimmings, weight per dozen 204 lbs.	$4.00

CANE MILLS

These mills are made of the best material obtainable and the workmanship the highest class. The mills in frames have steel journals and will give the best service

Two Roll Mill in Cast Frame

Two-Roll Mill

	Each
Little Giant—10 x 8 in. rolls, capacity per hours 30 to 40 gal.	$45.00
Farmers' Friend—12x9 in. rolls, capacity per hour 40 to 50 gallons	60.00
Champion — 14 x 9 in. rolls, capacity per hour 50 to 60 gal.	75.00

Three Roll in Cast Frame

Three-Roll Mill

	Each
No. 1—10x6 in. large roll, 6x6 in. small roll, capacity per hour 30 to 40 gallons	$45.00
No. 2—12x6 in. large roll, 7x6 in. small roll, capacity per hours 40 to 60 gallons	62.00

Two Roll Cast Iron Mills for Wood Frames

These mills are extra heavy with large journals. Not guaranteed. In ordering rolls give diameter and state number of cogs wanted

Prices on these mills do not include frames.

Diameter rolls, in.	**11**	**12**	**14**
Length under cogs, in.	8	9	9
Each	$30.00	36.00	43.00

BLAW-KNOX COMPANY

Farmers Bank Bldg., PITTSBURGH, PA.

NEW YORK BALTIMORE BIRMINGHAM CHICAGO DETROIT BUFFALO LONDON, ENG.

Blaw-Knox Standard Buildings For All Purposes

Uses

Storage Buildings, Bunk Houses, Mess Halls, Tool Sheds, Machine Shops, Meter Houses. Blaw-Knox construction is adapted to every building requirement.

Blacksmith Shop, Consumers Mining Co., Harmarville, Pa.

Blaw-Knox Standard Buildings meet practically every housing requirement of the mining industry. They are by size, design, materials used, structural features, portability and ease of erection, adapted to any and every use for which a light, fireproof and weatherproof building is needed. The building required can be selected from a large variety of standard sizes and types and will be shipped from stock—skilled labor is not necessary for their erection and the cost of plans and drawings is saved.

An entirely structural framework, bolted together, provides ample strength and rigidity.

A better building in quicker time—at a nominal price. The erection cost is small—there is no maintenance expense.

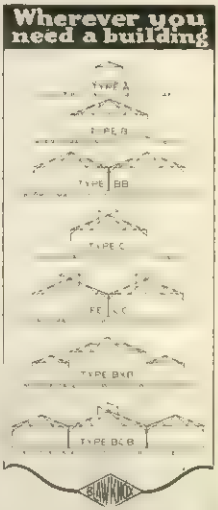
The wall and roof sheets are made of specially pressed (patented), heavily galvanized copper-bearing sheet steel, provided with an interlocking stud running the length of the sheet. The heavy galvanizing of these sheets prolongs their life indefinitely, eliminating entirely the necessity of preservative painting.

Colony of Blaw-Knox Buildings. A Meter House, a Watchman's Shanty, and a Bunk House.

Blaw-Knox Standard Buildings are weatherproof and fireproof throughout and provide excellent housing for the storage of powder, acids and other combustibles. Absolutely leakproof and guarded against the corrosive and wearing action of the elements.

All sizes from 8 to 60 feet in width can be furnished, in 8 to 24 feet heights at the eaves as desired. Steel sash, windows, skylights, doors and ventilators are standard and can be furnished as required.

The panel shown herewith illustrates the various types of Blaw-Knox Buildings we are prepared to furnish. All shipments are made complete.



Clamshell Buckets

Standard varieties of Blaw-Knox Buckets include single-line, two-line, three-line and four-line clamshells for all work from the lightest rapid rehandling to the most difficult digging and dredging.

We can furnish a bucket which will meet your crane and working requirements to perfection.

TRUSCON STEEL COMPANY

YOUNGSTOWN, OHIO

Manufacturers of

Standard Steel Buildings

Products

Portable Steel Buildings for industrial purposes

Steel Sash for every industrial purpose (hand or mechanically operated)

Steel Boxes, Platforms and Foundry Flasks

Concrete Reinforcing

TRUSCON STANDARD BUILDINGS

General Data—All Types

Lengths and Widths—see illustrations below

Standard Curb Heights—8, 16 and 24 inches

Any arrangement of doors and windows is provided by the combination of the various interchangeable units

Truscon Standard Building used as substation with fan house U. S. Coal and Coke Co., Gary, W. Va.

Truscon Standard Building, Miley Compressor Station Vernon, Ohio

Uses

Truscon Standard Buildings are used in the coal industry for machine shops, storage of coal, machinery and equipment, stables, fan houses, wash houses, construction camps, company stores and offices, engine houses, housing over tipples and rotary pumps—they are used for any purpose where a one-story building will suffice. They can also be designed for two-story buildings, if the needs are adaptable to light construction.

Description

Truscon Standard Buildings are completely shop fabricated, requiring only the labor of assembling. No cutting or altering of units is necessary, as the building when it reaches the place of erection, has had every element of manufacturing performed upon it by engineering and mechanical experts. They are built of standard units of uniform size, interchangeable and assembled by means of a simple locking device. They can be rapidly taken down, re-arranged, enlarged, or reduced and re-erected in a new location with 100% salvage value.

They are fireproof throughout. Trusses, side walls, roof, doors and sash are all of steel. They are permanent in the very nature of their construction. The side wall panels and the roof are manufactured from 18 gauge Truscon Alloy Steel, a steel that has proven its superior durability in tests in different parts of the country covering a period of years. The steel windows are welded into the steel panels, affording maximum daylight and ventilation. The steel doors are furnished either single or double and are equipped with Yale lock or latch which provides for padlock. The steel roof trusses support steel roof plates, tilelike in appearance and absolutely weathertight.

Engineering Service

The Truscon Steel Company maintains a force of engineers in all cities. They will co-operate with you on every detail of your building problem—layout, estimating, detailing and erection.

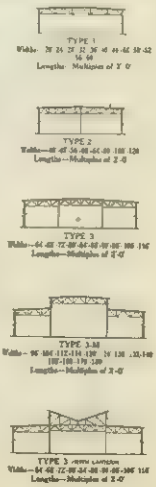
A Type for Every Purpose

Typical of the adaptability of Truscon Standard Buildings to all conditions is the ease by which various types of buildings can be combined to produce efficiency in layout. The standard units lend themselves to unusual combinations of two or more types in one structure.

Additional light and ventilation may be secured by placing our standard lantern astride the ridge of any Truscon Standard Building, 40'0" or more in width, other than monitor or sawtooth types. Mechanical operators for steel window ventilators can be furnished if desired.

Additional floor space for buildings can be readily obtained by the use of a "lean-to," which can be made up of our standard units.

Canopies are desirable in some instances. They can be had on any Truscon Standard Building with 10'9" side walls or higher.



Machine Shop, Truscon Standard Building, Pennsylvania Coal Co., Betsy Layne, Ky.

RAZORS
BOKER'S TREE BRAND

PEARL

Extra hollow ground, front side crocus polished, pearl scale tang, hard rubber handle.

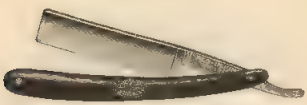
Per dozen
No. 2051—Square Point, width of blade ⅝ in. $54.00
Weight per dozen 1¾ lbs.
One in a case, one-half dozen in a box.

WALDORF

Extra hollow ground, front side crocus polished, pearl scale tang, etched in gold, fancy hard rubber handle.

Per dozen
No. 2056—Round Point, width of blade ⅝ in. . . . $54.00
Weight per dozen 1¾ lbs.
One in a case, one-half dozen in a box.

RED-INJUN



Special full hollow ground, polished blade, oval hard rubber handle, specially suited for fine professional work.

Per dozen
No. 1041RP—Round Point, width of blade ⅝ in. . . . $48.00
No. 1041SP—Square Point, width of blade ⅝ in. 48.00
Weight per dozen 1¾ lbs.
One in a case, one-half dozen in a box.

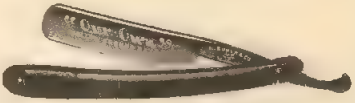
INDIA

Special hollow ground, front side crocus polished, black hard rubber handle.

Per dozen
No. 1101—Round Point, width of blade ⅝ in $48.00
Weight per dozen 1¾ lbs.
One in a case, one-half dozen in a box

RAZORS
BOKER'S TREE BRAND

OUR OWN



Half hollow ground, etched blade, black hard rubber handle.

Per dozen
No. 1061—Round point, width of blade ⅝ in. $30.00
Weight per dozen 1¾ lbs.
One in a case, one-half dozen in a box.

RAZOR ASSORTMENTS
BOKER'S TREE BRAND

Assorted fancy handles, best selection of blades, front side of blades all crocus polished, display case handsomely made in imitation seal and alligator with glass cover and easel. Assortment consists of six razors with display case free.

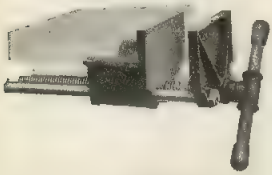
Per assortment
No. 1081-½—Consists of three each ½ in. round and square point razors $18.00
No. 1081-⅝—Consists of three each ⅝ in. round and square point razors 18.00
No. 1082-½—Consists of six ½ in. round point razors. 18.00
No. 1082-⅝ Consists of six ⅝ in. round point razors. 18.00

One assortment in a box

BOKER "TREE BRAND" RAZORS AND POCKET KNIVES ARE STANDARD THE WORLD OVER. THEY SELL ON SIGHT.

VISES

RAPID-ACTING VISES



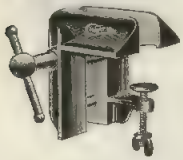
Grey Iron Jaws, working surfaces ground and finished; cold-rolled steel guides.

Two inch jaws, opening 10 inches 1-inch bench screw

No. 430-1—Head or side-vise, weight 32 pounds .....Each $12.00

No. 430S-1—Tail vise, with brass stop in front jaw, weight 33 lbs...Each $13 20

CHAMPION VISE



A practical woodworker's vise. Weighing only four pounds, can be carried in carpenter's kit; will fasten to anything from ⅞ to 2¼ inches thick.

No. 555—Champion vise.....Each $4 80

HAND VISES

No. 140—5 inch, solid steel, polished jaws; wt. per doz., 8 lbs .Per Doz. $7.50

UNIVERSAL VISE ATTACHMENT

Fits Any Vise—Grips All Shapes.

A supplementary vise jaw that adapts itself to any shape or form of material. Instantly converts an ordinary square-jawed vise into a general purpose tool through the independent action of each tooth or gripper slipping is entirely eliminated. Made of cold rolled tempered tool steel, electrically welded.

No. 4—4 inch set, wt., 4 lbs . Each $2 00

No. 6—5 inch set, wt., 4½ lbs .Each $2 00

YANKEE VISES

Cast iron body and sliding jaw; has a case hardened steel removable jaw for holding taper work; 1½ inch steel adjusting screw.

No. 990—2⅜x5 inch base; jaw open, without removable jaw, 3 inches; with removable jaw, 2⅝ inches, weight each 3¾ lbs..... Each $4 90

YANKEE SWIVEL VISES

Swivel base, easily locked or released. Upper part quickly detached if desired Body and sliding jaw cast iron, with hardened steel faces. Hardened steel block for holding round or irregular shaped work.

With Swivel Base

Nos.	1991	1992	1993
Swivel base, diam., ins..	2⅛	3⅛	4⅛
Height, overall, ins.....	3⅛	4⅛	5⅛
Net wt., lbs.....	2⅝	5⅛	13⅜
Each $6 00		9.00	15 00

Without Swivel Base.

Nos.	991	992	993
Base, length, ins.....	3⅝	4⅞	7¼
Base, width, ins.....	1½	2	2⅝
Jaws, opening, ins.....	1½	1⅛	3⅛
Jaws, depth, ins.....	⅞	1¼	1⅝
Jaws, width, ins.....	1½	2	2⅝
Height, overall, ins	1½	2-7/8	3
Length, overall, ins ..	4⅝	6	8⅝
Net wt., lbs.....	1⅜	3⅜	9¼
Each, ...$4 20		5.60	10.30

BONNEY VISE ASSORTMENT

No. 10—Consisting of 17 vises as follows.

6 only No. 00 3 only No. 02

6 only No. 01 2 only No. 02½

mounted on display stand; weight per assortment, 38 pounds

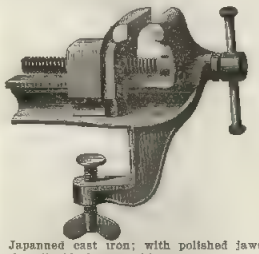
Per Assortment $20 00

LUTHER SQUARE SHOULDERED

A very sturdy well built vise, especially adaptable for shop use. Equipped with one piece steel handle, steel feed screw and steel guide. Attractively finished in orange enamel

Nos.	V-92	V-92½	V-93
Width of jaw, ins.....	2	2½	3
Spread of jaw, ins.....	2½	3	3
Weight, pounds	7	10	12
Each $2.80		3.86	7.00

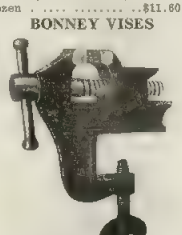
UNIVERSAL VISES



Japanned cast iron; with polished jaws and malleable iron machine-cut screw.

Nos.	1	2
Width of jaws, ins.....	1⅛	2
Wt., per doz., lbs.....	8	12
Per Dozen $11.60		13.20

BONNEY VISES



Cast iron frame; best grade gray iron jaws, cast semi-steel main and thumb screws with cut threads. head and collar are of a single piece with the main screw and will not wear out or pull off. Black baked enamel finish with polished screws, jaws and anvils

Nos	00	01	02	02½
Width jaw, ins.	1	1¼	2	2½
Jaws, open, ins.....	1½	2	2¾	2
Wt., per doz.....	12	18	27	48
Each $0.88		1.04	1.48	2.54

BOYCE MOTO-METERS

Boyce Moto-Meter is the only instrument in the world which indicates that the unseen parts lack lubrication—if the cooling water is low or if there is heat congestion anywhere throughout the mechanism of the car. The Boyce Moto-Meter is a heat gauge which will instantly warn the driver of hidden dangers under the hood **before** they happen. They take very little room and have an all year demand. Each Model can be attached to the radiator cap in 10 minutes.

Midget Model.

A genuine Boyce Moto-Meter especially designed to meet the demand of the small or light car owner. It combines accuracy with sturdiness of construction. It has a polished nickeled frame and is finished with bevelled crystals both front and rear. Size, 2¼x3⅜ inches. Weight (packed in carton) 5 ounces.

Midget Model .....Each, $3.50

Special Model—For Ford Cars.

This new instrument is designed especially for use on Ford Cars. It has a broad thermometer tube, which is easily readable even at a distance. It is provided with bevelled crystals both front and rear, and is finished in polished nickel. The Special Ford cap with which it is equipped makes it an ideal instrument. Size, 2⅜x3⅞ inches. Weight (packed in carton) 7 ounces.

Ford Special Model .....Each, $4.00

Junior Model.

Junior Model.

This Model appeals strongly to owners of cars of medium size. The frame of this instrument is heavily nickel plated, and it has the same range of temperature as the Standard and Universal Models. Size, 3x4⅞ inches. Weight (packed in carton) 8 ounces.

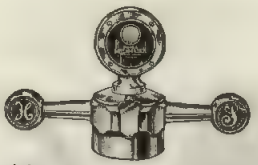
Junior Model .....Each, $5.00

Universal Model.

Slightly smaller than the Standard Model, finished in all nickel. A very beautiful instrument. Beveled crystals add to its appearance. Its handsome open face is more easily read than a clock. Size, 3x5 inches. Weight (packed in carton) 12 ounces.

Universal Model .....Each, $7.50

Universal Model.



Aristocrat Model—For Ford Cars.

The handsome New Boyce Moto-Meter, a bar cap, and a theft-proof lock offered as a single unit. In addition, a touch of individuality is added by supplying the owner's initials or club insignia for insertion in the bull's-eyes at either end of the cap.

Packed with each Aristocrat Model Boyce Moto-Meter is a free dial post card showing the different designs which can be supplied. The postcard should be filled in and sent to the Moto-Meter Co., Inc. In exchange for this any two designs specified will be sent without charge.

Aristocrat Model .....Each, $7.00

Standard Model.

A perfect heat recording instrument of the highest type, with extremely broad ribbon bore thermometer tube. Because of its perfection of workmanship, the Standard Model has been selected as regular equipment on America's leading cars. Size, 3⅝x5½ inches. Weight (packed in carton) 16 ounces.

Standard Model .....Each, $10.00

Truck and Tractor Model.

This model has been designed especially for severe conditions so often met with in truck and tractor service. The casing is nickel plated. The diameter of the thermometer tube is one-half inch which makes breakage impossible. The frame of the instrument is very substantial, and the thermometer tube thoroughly protected. Size, 2⅞x4¾ inches. Weight (packed in carton) 16 ounces.

Truck and Tractor Model.....Each, $10.00

Packed—Entire Page, One in a Carton.

BOYCE MOTO-METER

MIDGET MODEL

A model especially designed to exactly suit the needs of the small or light car It possesses the same accuracy of the larger models with the same high quality of workmanship and finish. Built to fit regular radiator cap of all Chevrolet "490," Maxwells, and other small cars.

Midget .....Each $3 50

SPECIAL FORD MODEL

If every Ford owner knew the value of the Boyce Moto-Meter he would install this special model for the Ford immediately. It is an investment that every Ford owner should make. It has bevelled crystals, both front and rear, and is supplied complete with Condensite radiator cap. Size, 2½x4¼ in.

Ford Special.....Each $4 00

ARISTOCRAT MODEL

A genuine Midget Boyce Moto-Meter mounted on a handsome locking cap. The complete unit is nickel plated and assembled ready for installation.

The Aristocrat Model Boyce Moto-Meter for Chevrolet, Maxwell, Overland, Star and Gray is furnished complete with adaptors. No adaptors are necessary when installing on the Ford.

While the Midget Model Boyce Moto-Meter is regularly furnished with the Aristocrat the hole in the cap is sufficiently large to permit the use of the Universal Model, without interference from the stem of instrument in opening the cap.

Ford Aristocrat Model.....Each $7.00

Aristocrat Models for Chevrolet, Maxwell, Overland, Star and Gray require extra adaptors. Order by name of car.

Extra Adaptors.....Each $0.50

UNIVERSAL MODEL

Slightly smaller in size than the Standard model, but in workmanship and accuracy they are the same. Finished in all nickel with beveled plate glass crystals both front and rear. Very striking in appearance, giving a touch of "class" to any car. Size, 3x5 in.

Universal ..... Each, $7.50

STANDARD MODEL

A perfect heat-recording instrument of the highest type. The thermometer tube gives a broad ribbon effect. Finished in black enamel and nickel, with heavy plate glass beveled crystals, front and rear. Because of its perfection of workmanship, the Standard model has been selected as regular equipment on America's leading cars.

Standard ..... Each, $10 00

DE LUXE MODEL

This model is for use on the highest grade passenger cars. The case is triple nickel plated and the finish is of the highest quality. Size, 3¾x5 in. Each De Luxe instrument is equipped with the Schlaich Chain Lock, protecting it against theft

De Luxe. .Each $15.00

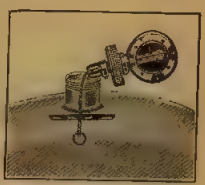
TRUCK AND TRACTOR

Designed especially for use under severe service conditions, the fram of this instrument is very substantial and protects the indicating tube against damage. It is finished in all nickel. Size, 3⅝x4¾ in.

Truck and Tractor .....Each $10.00

MOTO-METER LOCKS

SCHLAICH



For Boyce Moto-Meters

Nickel-plated nozzle. Brass channel bar and ring. Nickel-plated brass chain connecting nozzle and channel bar. With the Schlaich Lock the cap can be unscrewed to fill radiator, but remains locked to the car, a safeguard against theft.

No. 1—Size, ⅜ in. De Luxe Truck and Tractor .....Each, $2.00

No. 2— Size, ⅜ in. Standard and Universal.....Each, $1.80

No. 3—Size, 7-16 in. Junior and Ford .....Each, $1.80

No. 4—Special Overland.. ..Each $1.50

No. 5 Special— Size, ⅜ in. Nash and 1921 Oakland. .....Each, $1.80

No. 7 Special—Size, ⅜ in. Lincoln, Chandler, Marmon . .....Each, $1 80

BOYCE MOTO-METER

REPAIR PARTS OUTFIT

Every jobbers' salesman appointing a Boyce Moto-Meter Service Station should impress on the dealer the extreme importance of having a Boyce Moto-Meter Repair Parts Outfit. With a kit of this sort the dealer is able to make a large number of minor repairs such as replacing broken crystals, retaining rings, missing screws, etc. In fact, he cannot give proper service without this valuable outfit.

We have prepared this new package as a result of a questionnaire which was sent to all Boyce Moto-Meter Authorized Service Stations. The response to this was so unanimously in favor of something of this sort that we have put it out and are now ready to make immediate deliveries.

List of Parts Included in This Outfit Follows:

12 Beveled Crystals
3 Retaining Rings for Standard and De Luxe
2 Retaining Rings for Univ.
6 Gaskets for Standard and De Luxe
3 Gaskets for Universa.
3 5/8-in. Brass Nuts
3 7/8-in Brass Nuts
2 1/4-in. Brass Nuts
3 5/8-in. Lock Washers
3 7/8-in. Lock Washers
2 1/4 in Lock Washers
3 5/8-in Flat Steel Washers
3 7/8-in Flat Steel Washers
2 1/4-in. Flat Steel Washers
3 5/8-in. Large Rubr Washrs
3 5/8-in. Small Rubr Washrs
3 7/8-in. Large Rubr Washrs
3 7/8-in. Small Rubr Washrs
2 1/4-in Large Rubr Washrs
2 1/4-in Small Rubr Washrs
24 4-36 Retain'g Ring Screws
24 3-48 Retain'g Ring Screws
12 2-56 Scre for Midget, Junior and Truck & Tractor
3 Celluloid Discs
3 Overland Plug Screws
3 Overland Stem Screws
2 Sets of Special Cadillac and Lincoln Washers
1 Boyce Moto-Meter Wrench

The different parts are packed in individual containers—each properly marked with the contents and the list price of each part. The entire outfit is packed in a strong fibre-board box 4 1/4 x 3 3/4 x 8 1/4 in., weight approximately 2 lbs. 6 ozs.

Moto-Meter Repair Kit... Each $7 50

LIST OF PARTS

Scale Dials, all sizes, and special nameplates regularly carried in stock	$0 50
Glass Crystals, beveled	.20
Retaining Rings for Crystals, nickeled	.10
Gaskets for Crystals	.10
Condensite caps for Special for Ford Mode.. drilled	.50
Nuts	.10
Lock Washers	.06
Overland Tube Plug Screws	.04
Rubber Washers, all sizes	.14
Flat Steel Washers	.04
Screws for Standard, Universal, Junior, or Midget, and for Overland Stem	.02

LOCKING CAP PARTS FOR ARISTOCRAT MODEL

Special Initial Dial Plates	Each	$0 10
Upper Rubber Gasket	Each	.10
Lower Rubber Gasket	Each	.10
Locking Set Screws	Each	.10
Wrenches	Each	.10

SPECIAL NAMEPLATE INFORMATION

The Boyce Moto-Meter special nameplate proposition offers an opportunity long needed for the car distributor, dealer and agent to get personal advertising afforded by the car. In no other way and in no other location can such conspicuous yet dignified display be found as on a Boyce Moto-Meter mounted on the radiator cap of the car.

The various conditions under which special nameplates are supplied follows:

Car Nameplates Regularly Carried in Stock

1. Stock car nameplates will be furnished without extra charge to all purchasers of De Luxe and Standard Model Boyce Moto-Meters as explained on the "Free Nameplate Postcard," one of which is always packed with each De Luxe and Standard Model instrument. The "Free Nameplate Postcard" provides for the supplying of nameplates (car name only) for every standard make of car, also for a number of fraternal emblems, club insignias, initials, etc., as listed on this card.

Boyce Moto-Meters with stock design car nameplates will be furnished to car distributors, dealers or agents in De Luxe, Standard and Universal Models in any quantity.

These will be inserted at the factory, when so ordered, without extra charge.

Special Car Nameplates with Dealer's Name and Address Engraved

2. Any car distributor, dealer, or agent, who places an order for fifty (50) or more Boyce Moto-Meters, any one model (excepting Midget, Special Model for Ford or Aristocrat), one delivery, and on a non-cancellable order, will be furnished with a special nameplate without extra charge showing the nameplate design of the car he handles, together with the dealer's name and address engraved below.

Should any one car distributor, dealer, or agent handle more than one make of car, we will permit an assortment of different car nameplate designs, but only one and the same dealer's name and address will be engraved on the entire quantity of fifty (50). The assortment must also cover fifty (50) Boyce Moto-Meters of the same model. Time required for delivery, three weeks from receipt of order

Special Dial Plates for Aristocrat Model

3. Special initial dial plates for bars on cap may be procured in exchange for the "Free Nameplate Postcard" packed with each instrument. Any two initials, or fraternal dial plates as listed on this card will be furnished, free, in exchange for the postcard.

Owing to the individual nature of these dial plates, we will not ship this model with dial plates already inserted, but request that when special dials are wanted, the "Free Nameplate Postcard" be used in each instance

Under no circumstances will special car design nameplates be furnished for the Boyce Moto-Meter mounted on the Aristocrat Model.

We will, however, supply car name designs for insertion in the bulls-eyes at both ends of the cap, showing Star, Chevrolet, Maxwell and Overland nameplate designs only in instances where the Aristocrat Model has been adapted for use on any of these four cars. Dealers may procure these in exchange for the Free Dial Post-card, one of which is packed with each instrument.

SERVICE

Another great merchandising feature, which has been laid out to create business, is the Service Station plan, which enables the dealer to make extremely liberal adjustments on Boyce Moto-Meters—possibly the most liberal ever allowed on any article of merchandise. The only qualification is ten or more instruments either in stock or on order, to make any dealer eligible to operate as a Service Station. This gives you a powerful sales lever for creating business not only on Boyce Moto-Meters, but on other lines as well

This service plan is so designed that you may make immediate adjustments with Boyce Moto-Meter users whose instrument may have become damaged by replacing the damaged instruments with a brand new one from your stock at one-half list, as provided for. This eliminates the necessity of the user being deprived of the use of the "most necessary instrument on his car" as has been the case in the past when it was necessary to return damaged instruments to the factory.

It is not practicable for Service Stations to replace broken thermometer tubes, inasmuch as to do this it is necessary that the instrument be completely disassembled and the broken tube drilled out. The time involved, together with the expense of the parts necessary, would make such a repair prohibitive. Instruments with broken thermometer tubes should, therefore, be exchanged at one-half list price, as provided for in this Appointment.

That's What They All Say!!

Exhibitors Herald

Boy of Mine, with Ben Alexander—Here is a picture that is entitled to all the good things said about it. Every boy and every man that ever was a boy will go wild over this, and the women—well, the only woman that won't like it might be the landlady who has no use for children. Seven reels.
Frank L. Browne, Cabrillo theatre, San Pedro, Cal.—General patronage

Boy of Mine, with Bennie Alexander—One of the best family pictures ever made. Will suit the kids, Dad, Ma, Grandpa and Grandmother. More comments on this than most anything I ever screened. Step on this a little extra, then hold over so that those who have seen it can tell their friends. Average business for five days. Film good.—R. S. Wenger, Victory theatre, Union City, Ind.

Boy of Mine, with a special cast.—A peach of a family picture. Not a kick out of the whole crowd. More like 'em. Seven reels.—J. G. Callow, Auditorium theatre, [illegible]ington, Ill.—General patronage.

Boy of Mine, with a special cast—Good! That's the only way I know how to express it. Anyone who would not like this would be some heartless person.—E. J. Reynolds, Liberty theatre, Pasco, Wash.

Boy of Mine, with Ben Alexander—Not a big picture, but one of the most pleasing that we have shown during the entire season.—L. D. Hendrix, Strand theatre, Mt. Vernon, Iowa

Boy of Mine, with Ben Alexander—A picture you can get behind and give an extra boost. If anyone knocks this picture they are a little off in the upper story. As good as "Penrod and Sam."—Good print from St. Louis.—Russel, Armentrout, K. P. theatre, Pittsfield, Ill.

Boy of Mine, with a special cast.—Another big wallop for First National, but we had better business with this than we thought was possible under the present slump. Positively made some money for ourselves, and I am here to tell you making money on pictures these days in my town is something. Seven reels.—W. H. Brenson, Cozy theatre, Winchester, Ind.

Boy of Mine, with Ben Alexander—Too much can not be said for this picture. It grips you and holds your interest, only to fill you with a high resolve at the end to live on a higher plane. Every artist in it perfectly placed. You must show this picture to your patrons. Don't hesitate to recommend it.—E. W. Swarthout, Palace theatre, Aurora, Ind.—Small town patronage.

Boy of Mine, with Bennie Alexander—This is a wonderful picture with a wonderful cast. Pictures like this are a cure for sick box offices. To look at Irene Rich would make anybody well.—Chet Miller, Rialto theatre, Loveland, Colo.—Neighborhood patronage.

Boy of Mine, with Ben Alexander—I think that I can truly say that this picture brought us more favorable comments than any picture we have played, except perhaps the "Potash and Perlmutter" picture. This is truly a good picture and will please the audience in any town. Seven reels.—E. L. Wharton, Orpheum theatre, Glasgow, Mont.

J. K. McDONALD PRESENTS

"BOY of MINE"

by

BOOTH TARKINGTON

featuring

Ben Alexander, Henry Walthall, Irene Rich, Rockliffe Fellowes

directed by WILLIAM BEAUDINE

scenario by HOPE LORING and LOUIS D. LIGHTON

assisted by REX WEIL

FIRST NATIONAL PICTURES

A First National Picture

Copyright Applied For by Associated First National Pictures, Inc.
383 Madison Avenue, New York

Selected Headliners

As Disclosed By Their Past Performances in the Box Office Hall of Records

Universal

A CHAPTER IN HER LIFE—3,792 Bookings. Child Love. Reviewed Jan. 26. BECAUSE the story has that universal appeal that goes straight to the hearts of those compromising any audience

THE ACQUITTAL — 4,390 Bookings. Mystery Play Reviewed Dec. 8. BECAUSE of the cast and the interesting story portrayed so convincingly that the film is a box-office winner

A LADY OF QUALITY—3,779 Bookings. Love Story. Reviewed Dec. 29. BECAUSE it is a corking good love story and boasts Milton Sills and Virginia Valli in the cast.

DARLING OF NEW YORK — 3,881 Bookings. Child Story. Reviewed Nov. 10. BECAUSE Baby Peggy has a great supporting cast, and the picture itself is a charming combination of sunshine and shadow.

DRIFTING—4,229 Bookings. Action and Adventure. Reviewed Oct. 27. BECAUSE it is a stirring melodrama starring Priscilla Dean and having Wallace Beery and Matt Moore in the cast

THE FLIRT Booked 6977 times. Love and Society Picture. Reviewed February 9. BECAUSE it numbers among the most popular pictures on the screen, and has a ready made audience waiting for a chance to see it.

FOOLISH WIVES—Over 6,000 Bookings. Love and Intrigue. Reviewed Feb. 2. BECAUSE Erich Von Stroheim produced the picture and played the lead, and the story is of universal interest.

FOOLS HIGHWAY—3,194 Bookings. Lights and Loves of New York. Reviewed Mar. 29. BECAUSE Mary Philbin shines as a great star, and because the story shows New York in the good old, bad old days

HUNTING BIG GAME—4,873 Bookings. Adventure in the Wilds. Reviewed Feb. 9. BECAUSE it is a true adventure picture replete with real thrills and takes audiences on a personally conducted tour

THE LAW FORBIDS—1,559 Bookings Domestic Drama. Reviewed (?) . BECAUSE Baby Peggy heads a powerful cast, and the story has a strong theme built around the sanctity of the home.

MERRY GO ROUND—4,916 Bookings. Love and War. Reviewed Jan. 19. BECAUSE Mary Philbin, Norman Kerry and the picture itself proved a box-office sensation of 1923

THE STORM DAUGHTER—1,601 Bookings. Sea Story. Reviewed April 19. BECAUSE it is one of the outstanding box-of the ocean deeps starring Priscilla Dean and featuring Tom Santschi

THUNDERING DAWN—4,304 Bookings. Melodramatic Thriller Reviewed Dec. 15 BECAUSE it stars Anna Q. Nilsson and J. Warren Kerrigan and shows the best Tidal Waves and typhoon scenes ever filmed.

TRIFLING WITH HONOR—4,941 Bookings. Baseball Story. Reviewed Jan. 26. BECAUSE the great national interest in the national games makes this a sure-fire attraction.

WHITE TIGER 3,839 Bookings. Crook Melodrama. Reviewed April 19. BECAUSE Priscilla Dean stars, and the picture has proven appealing to audiences all over the country.

Paramount

THE PURPLE HIGHWAY—Whimsical Comedy. Reviewed April 19. BECAUSE it is an appealing story which Madge Kennedy carries across to real success and it has provided good entertainment where it has been shown.

THE WHITE FLOWER—Released March 4, 1923. Tropical Love. Reviewed February 2. BECAUSE it handles South Sea scenes with a delicacy and romance that gives Betty Compson an opportunity for some exceptional interpretations.

HER GILDED CAGE—Reviewed March 8. Love Drama. BECAUSE it is an intimate pathetic story which touches the heart and appeals to the sophisticated and the simple, and it presents Gloria Swanson in a role that her followers like and approve

BACK HOME AND BROKE—Comedy Drama. Reviewed March 1. BECAUSE it is a George Ade story of the highest type and it gives to Thomas Meighan a delightful role which he portrays capably and in a manner to please the most fastidious.

TRAIL OF THE LONESOME PINE—Reviewed December 22. Family Feud. BECAUSE Antonio Mareno and Mary Miles Minter have made of this picture a highly interesting and entirely absorbing story that is liked everywhere.

Selznick

THE ROAD OF AMBITION—Rise of Youth. Reviewed December 29 BECAUSE it is a fine moral story in which Conway Tearle appears as a sympathetic character who more than pleases his audiences.

LOVE IS AN AWFUL THING—Marriage Difficulties Reviewed January 19. BECAUSE audiences cry with laughter when they see it and Owen Moore appears at his best in it.

JUST A WIFE—Triangle Drama. Reviewed December 15 BECAUSE it brings to the screen a sympathetic and clean story of the love and sacrifice of a woman and thus sounds the popular appeal.

THE LAW OF COMPENSATION—Marriage Drama. Reviewed December 22. BECAUSE it has proved by its record that it is a story which gives Norma Talmadge a role she is well capable of handling and it pleases big city and small town audiences.

C. C. Burr

THE NEW SCHOOL TEACHER—Rural Romance. BECAUSE it features Russel Griffin in a part for which he is admirably suited and into which he injects a personal touch that cannot fail to get across to all audiences.

THREE O'CLOCK IN THE MORNING—Modern Youth. Reviewed March 22 Booked 100 per cent States Rights. BECAUSE it has every element to please small and large town audiences interested in youth of the jazz age.

RESTLESS WIVES—Matrimonial Problem. BECAUSE it is a story with a strong appeal to both sexes and attempts to bring about a better understanding of the existing conditions in matrimonial life of the middle classes.

WINNERS

At a Glance

1. Pagan Passions
2. Aubrey Comedies
3. Daughters of Today
4. Flapper Wives
5. Roulette
6. Col. Heeza Liar

Judge Them By

Past Performances

They're All

Tried and Proved

WINNERS

SELZNICK DISTRIBUTING

"The prints are in FINE CONDITION"

C. C. BRADLEY & SON, Inc.

Established 1832

SYRACUSE, NEW YORK

Bradley Hammers

Products

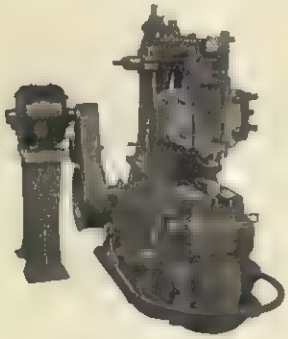
The Bradley Cushioned Helve Hammer.

The Bradley Upright Strap Hammer.

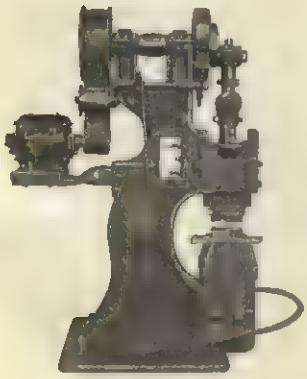
The Bradley Upright Helve Hammer.

The Bradley Compact Hammer.
All with or without motor drive.

Forges for Hard Coal or Coke.



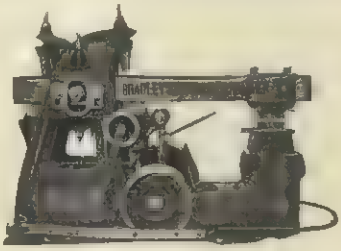
Upright Helve Hammer



Compact Hammer

The Bradley Always Makes Good

With a Bradley Hammer the mine shop can forge all your wrenches; draw bars; brake rods; clevises; coupling pins and links; bumpers; miners' picks; mining machine bits; hooks; chisels, and, in fact, every style or shape of forging required in the operation and maintenance of the mine equipment.



Cushioned Helve Hammer

On welding, swaging, drawing, collaring, die work, etc., Bradley Hammers always give satisfactory service. Outline the nature and dimensions of your work and let us estimate the saving you can effect by Bradley-Forging.

Bradley Hammers are built for long, severe service—and they make good. They are easy to operate and control, and require little attention and expense for repairs. For over 50 years Bradley Hammers have been the leaders of the field, and we have unlimited proof of their merits.

Bradley Hammers are made with heads weighing from 15 to 500 pounds. Gross weights of complete Hammers 800 to 13,200 pounds; 32 sizes and 4 styles. There is a "BRADLEY" that will save you time, labor and expense.

Write us for catalog and

"Forge Ahead With
A BRADLEY HAMMER"

BROOKVILLE TRUCK & TRACTOR CO.

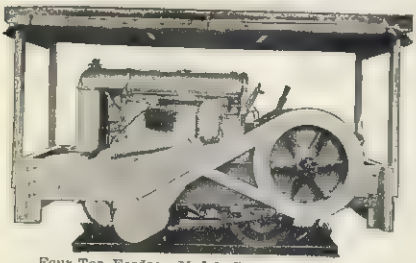
BROOKVILLE, PA., U. S. A.

Brookville Gasoline Locomotives

(FORDSON)
Four-Wheel Drive
Standard Weights 3½ and 4 Tons

Outstanding features of construction:

Power Unit: Standard Fordson tractor intact—100% local Fordson Service—A Service Station in every town.



Four-Ton Fordson Model, Complete With Cab.

Speeds: Suitable speeds in both forward and reverse without change to Fordson mechanism.

Drivers: 20" dia. with steel face—Brookville 4 ton locomotive will give the same traction to rails as a 5 ton machine with chills.

Wheel Base: 36½"—operates around the sharpest curves.

Locomotive Journals: High grade spring journals under all four drive wheels; insures a minimum cost for upkeep; holds machine to rails over the roughest track.

Draw Bar Pull: Guaranteed 3½ ton 1750 lbs. 4 ton 2000 lbs. Also guaranteed to slip drivers in sand on dry rail on low gear.

Will handle on low gear forward, based on 15 lbs., 20 lbs. and 30 lbs. Draw bar per ton requirements as follows:

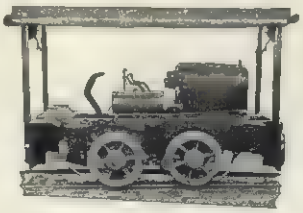
(4 TON)

	15 Lbs.	20 Lbs.	30 Lbs.
Level	134 tons	100 tons	66 tons
1%	64 tons	48 tons	38 tons
2%	32 tons	30 tons	26 tons
3%	28 tons	21 tons	19 tons
4%	17 tons	16 tons	14 tons
5%	14 tons	2 tons	12 tons
6%	11 tons	11 tons	1 tons
7%	9 tons	8 tons	8 tons
8%	7 tons	6 tons	6 tons
9%	6 tons	6 tons	5 tons
10%	5 tons	4 tons	4 tons

(FORD TON TRUCK)
Four-Wheel Drive
Standard Weights 2 and 2½ Tons

Outstanding features of construction:

Power Unit: Standard Ton Truck throughout, plus patented Brookville auxiliary reverse which gives high and low truck speeds in reverse the same as forward.



Two-Ton Ford Truck Model, Complete With Cab.

Speeds: Preference 3 and 8 miles, 3½ and 10 miles, or 4 and 12 miles.

Drivers: 20" dia. with steel face, the 2½ ton model will give the same traction to rails as a 3 ton machine with chills.

Wheel Base: 30" will negotiate any curve the average mine car will take.

Locomotive Journals: High grade spring type under all four drivers. Permits high speed and absorbs all rail shocks from mechanism.

Draw Bar Pull: Guaranteed, 2 ton 1,000 lbs., 2½ ton 1250 lbs. Also guaranteed to slip drive wheels in sand on dry rails, on low gear. Will handle on low gear forward, based on 15 lbs., 20 lbs. and 30 lbs. draw bar per ton requirements as follows:

(2½ TON)

	15 Lbs.	20 Lbs.	30 Lbs.
Level	83 tons	63 tons	42 tons
1%	34 tons	30 tons	24 tons
2%	21 tons	19 tons	18 tons
3%	14 tons	13 tons	12 tons
4%	1 tons	10 tons	9 tons
5%	8 tons	8 tons	7 tons
6%	7 tons	7 tons	6 tons
7%	5½ tons	6 tons	5 tons
8%	5 tons	4 tons	4 tons
9%	4½ tons	3½ tons	3 tons
10%	3 tons	3 tons	2½ tons

BROWN EQUIPMENT COMPANY

940 Ash Street, JOHNSTOWN, PENNA.

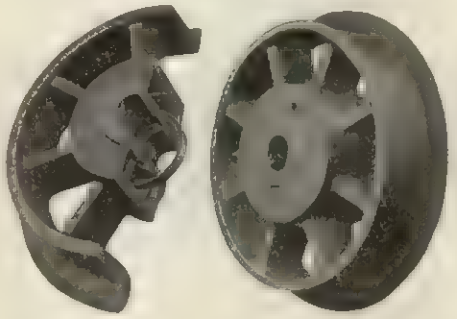
Mine Cars

Products

Mine Cars; Trucks; Car Wheels—Plain Bearing or "Ring Oiler", Roller Bearing either Timken or Hyatt; Axles; Car Irons; Hitchings; Brake Shoes; and Gray Iron Castings. Also see Page 578 for Hoists, Pumps, etc.

Mine Cars

Built from standard designs which have been developed and proven by actual service under all conditions,—or to customers specifications. Standard designs, one of which is illustrated, are built as light as possible, without sacrificing strength and durability. All irons are forged from soft steel bars. Axles are high carbon cold drawn steel. Only No. 1 Oak is used. Heavy channel type bumpers tie the bottom planks rigidly together as one unit. Bottoms are drilled to template, insuring accurate wheel gauge and alignment.



"Ring Oiler" Wheels

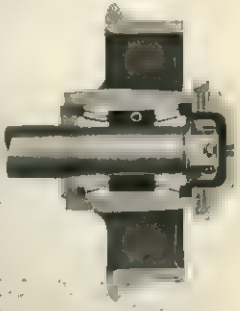
Our "Ring Oiler" wheels, which are made in 14", 16" and 18" sizes from pure pig iron of special analysis, are thoroughly chilled and carefully annealed. The hub is of large capacity and will carry sufficient oil to last for sixty to ninety days. The oil is applied to the axles by a steel ring cast inside the oil reservoir. This ring carries oil from the bottom of the reservoir and distributes it through ports in the hub to the axle directly over the gauge line, where the load is applied.

Design C-68

Track gauge 36"; overall length 9' 7"; width 55"; height 31"; capacity 1½ tons. Equipped with 16" "Ring Oiler" wheels and 2" Cold Drawn Steel Axles. Bottoms 2"—sideboards and ends 1¼" oak. Four belts ⅝"x2½", drawbar ¾"x 3½". Bumpers are made of ⅜"x 12"x24" plates shaped to go over 4" of wood. This car is often supplied with a lift end gate, and is a popular, rugged design for medium height of coal.

Roller Bearing Trucks

Can be furnished with wheels—10", 12", 14" or 16" diameter—equipped with either Timken or Hyatt Roller Bearings. Our standard designs have been developed in co-operation with the bearing manufacturers, and have been proven by service. These wheels undergo the same careful manufacturing process as the "Ring Oilers", particular attention being given to;—uniformity of chill in the tread and accurate alignment of the bore in the hub. Axles can be furnished of;—High Carbon Cold Rolled Steel, Special Axle Steel, or Heat Treated Machinery Steel, as required. These are regularly mounted in cast iron boxings which are carried by 8" channels bolted to the car bottom.

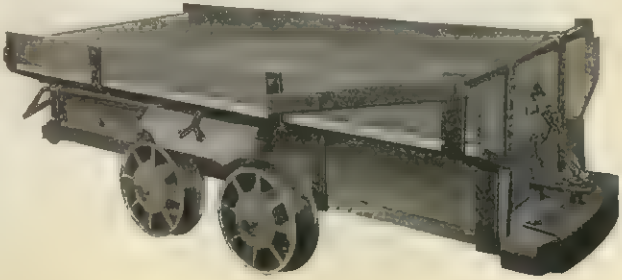


Timken Roller Bearing Wheel

The illustration shows our standard Timken Roller Bearing application. These bearings are especially applicable to mine car wheels since they carry both radial and end thrust loads. It will be noted that the wheel hub is thoroughly sealed at both ends thus retaining the lubricant for long periods.

Our standard Hyatt Roller Bearing design, (not illustrated) is of the open cap type using a straight axle. The wheel is held on the axle by means of a standard cotter pin and washer. The rear end of the wheel hub is machined on the thrust surface, and turned to a close fit in a bell mouth boxing which is packed with hard grease to form a seal. The bearing is held in the wheel hub by a heavy steel washer pressed into the rear end of the bore. The thrust of the wheel against the boxing is carried by a large steel washer. The Hyatt Roller Bearing is particularly suited for mine car wheels due to its shock absorbing ability.

Soft grease is used for the lubrication of either type of Roller Bearing Wheel, and, under ordinary working conditions, one greasing will last for six months to a year.



PLATES AND WHISTLES

EXPLOSION WHISTLES

Buell.

For All Passenger Cars and Motor Trucks.

Chime Model

Single Tone Model.

The Buell Explosion Whistle is a mechanism so simple and direct in its application of the explosion pressure of the engine that it is infallabile in its operation. The tone of the Buell is clear and not at all inclined to screetch or overtone. The operator can control the volume of sound, giving a light musical note or powerful compelling blast when an emergency requires quick action by a slight touch of the finger to control cord attached to steering column.

The Beull in in no way dependent upon the condition of electrical contacts or diaphragm adjustments and when once installed on your car needs no further attention. With sensible usage the Buell will outlive any car and provide the maximum in signal service.

The installation is simple. Screw it in place of a priming cup, or on cars where no opening can be drilled to the combustion chamber use the special Splitdorf spark plug of the type and thread used on your car.

Chime Model—Suitable for all sized motors. It is very satisfactory signal for even the most expensive cars. Has a mellow sound blown lightly and a commanding tone when open full.

Single Tone Model—Also suitable for all sized motors and works satisfactorily through the special spark plug opening. This model is equipment with sixty manufacturers. It has a clear powerful note that makes it very effective

Steamboat Model—Same as Single Tone, but with longer bell. Gives a deeper tone.

Single Tone with Ford Plug.

Buell Junior

Buell Junior—This is a smaller design capable of providing a good, clear warning note. It is not as heavily built as the standard Buell models but is operated on the same principle. Particularly adapted for use with spark plugs.

Style of Attachment	Regular	With Special Spark Plug	With Adapter
Chime Model—Complete with Valve, ⅛-inch Pipe; weight 1¼ lbs. Each	$7.00	$8.00	$....
Single Tone Model—Complete with Valve, ⅛-inch Pipe; weight, 1 lb. Each	5.00	6.00	....
Steamboat Model—Complete with Valve, ⅛-inch Pipe; weight, 1 lb. Each	5.50	6.50	....
Buell Junior—Complete with Valve, ⅛-inch Pipe; weight, ½ lb. Each	3.00	4.00	3.50
Spark Plugs—½-inch, ⅞-inch, ⅞-inch Ext.	1.00	....	....
Adaptor—½-inch (Ford)	.50	....	....
Special Lever Control	1.00	....	....

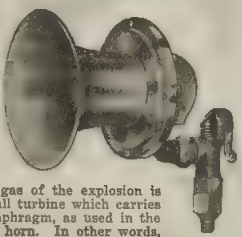
We use standard Mica Spark Plugs; indestructible and easily cleaned.

AUTO HORNS AND REEDS

TURBO HORNS

Buell

For All Passenger Cars and Motor Trucks.



The Buell Turbo Horn is a distinctive new type of warning signal utilizing the explosion pressure through priming-cup opening in cylinder head, using the same valve mechanism which has proven so successful in the Buell Explosion Whistles.

The high pressure gas of the explosion is used to operate a small turbine which carries a cam engaging a diaphragm, as used in the motor driven electric horn. In other words, the Buell Turbo Horn takes its mechanical power direct from the explosion of the cylinder instead of the devious circuit through engine, generator, battery and electric motor, each with its considerable loss of efficiency in transmission of power.

There is but one moving part in the Buell Horn, making it a signal with the maximum certainty of operation.

Comes complete with valve, steering wheel lever and enclosed wire control. Measurements of horn 4¼x7 inches over all.

Price complete, ⅛-inch pipe thread—Each.....$8.75

With Spark Plug for installation on cars without priming cups—Each 9.75

Horn Unit for installation on standard Buell Valve—Each 6.00

Valve only, ⅛-inch Pipe thread—Each..... 3.00

Steering-Wheel Lever and Control.. (Can be used for operating various devices)—Each..... 1.00

Spark Plugs only—Each 1.00

Weight, each, 2 lbs.

One in a box

MOTOR DRIVEN HORN

This horn is especially made for use on small cars, such as Dodge, Chevrolet and other small cars.

For Dodge Cars—The new Model 10-A Motor Driven horn can also be attached to engine of Dodge cars, but is supplied with 12 volts winding at no extra cost.

For Other Cars—For Chevrolet and other cars, where dash mounting is necessary, or for more convenient location, we furnish a universal bracket. Specify 10-A Horn with universal bracket when ordering.

Model 10-A—Weight each — lbs. Each.....$5.00

One in a box.

E. A. WARNING SIGNALS

E. A. Horns represent the highest development ever attained in both electric and mechanical warning signals, and they are built by the pioneer horn makers of the U. S.

The mechanical perfection embodied in their construction with only the best obtainable materials used, insures dependable service and very low upkeep cost.

There is an E. A. Horn for every type of car and the wide variety of bracket styles makes possible the mounting of horns in any convenient location.

Service stations throughout the world are available for adjustments and the replacement of parts required, thus insuring the highest degree of service to owners of E. A. Horns.

AN E. A. HORN FOR EVERY TYPE OF CAR

Model 10 A for Chevrolet, Star and other small cars equipped with Universal 3-piece Bracket. Model 10-AF for Fords equipped with regular bracket for engine mounting. Six and twelve volt.

No. 10-A—Gray Finish. With Universal Bracket. Lgth., 10¼ in. Diameter, 4¾ in. Each $5.00

No. 10-AF—With Ford Bracket. Each 5.00

No. 9 supplies a demand for warning signals in a timber or mountainous country where a louder horn is needed than on city streets. Wound for 6 and 12 volts. Measures 17¾ in. over all, with a 4-inch diameter horn at the mouth.

No. 9—Gray Finish. Equipped with bracket.....Each $7.00

Mile-Away

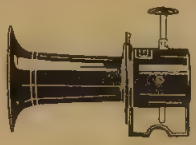
While the Mile-Away is especially adapted for large cars, it can be used on small cars as well, being wound for 6 and 12 volts. Measures 13 inches over all, with a 4-inch horn at the mouth, making it one of the loudest warning signals available. Packed with universal 3-piece bracket for dash mounting.

Mile-Away—Gray Finish .....Each $9.00

Torpedo Model

The Torpedo Model measures 13 inches over all, with a 6¾-inch rim and 3 in. diameter at the mouth of the horn. Is especially adapted to large cars, and comes equipped with brackets, push button and wire. Wound for 6 and 12 volts.

Torpedo Model—Gray Finish.....Each $13.50



Model A

Model A Hand Horn measures 9 inches over all, with a 5¾ x 4½-in. oblong bell.

Model A—Gray Finish. .....Each $4.00

BUELL TURBO HORN

The Buell Turbo Horn has the dignified tone of the motor-driven horn, but operates on an entirely different principle. Eliminating all electricity, it uses a turbine for motive power. Power is derived directly from the explosion in the engine cylinder. A small portion of the exploding gas is directed through the valve into the cups of turbine wheel, revolving it at a high speed. The ratchet on turbine then vibrates diaphragm, as in the usual type of horn.

The horn is operated by a new handy control lever, mounted just below the steering wheel. This enables the driver to sound horn without removing hands from the wheel.

The Buell Turbo is installed by merely unscrewing a cylinder pet cock and screwing the horn in its place. On motors without pet cocks, installation is made by using spark plug with opening to accommodate horn valve.

Installed in five minutes by car owner without altering car. The slightest touch of the handy control permits engine to sound the horn. Only a single rotating part with a hardened steel bearing in the horn—nothing to get out of order.

Packed with ⅛-in. valve.

Turbo Horn .....Each $8.75

Lever Control . Each 1.00

BUFF & BUFF MANUFACTURING CO.

Jamaica Plain Station, Boston, Mass.

Specialists on Surveying Instruments

Products

"Buff" Surveying Instruments; Transits and Levels.

Also Theodolites; Tripods; Leveling Rods; Plumb-Bobs; Plummet Lamps; Steel Tapes; Range Poles; Marking Pins, and Current Meters.

Permanent Accuracy

—the one thing the Engineer must have, is insured by the Buff experience of sixty years of successful Instrument-Making.

The Chief Engineer of a great Canadian Railway System writes us "There is no doubt but you produce the best instrument made on the American continent."

Please investigate the Buff before you purchase!

Directions for Ordering

Order (especially triangulation transits) as long beforehand as possible, to insure careful construction if not in stock. State plainly style, size, kind of finish, price, shipping directions, name of express company, etc.

Repairs to Instruments

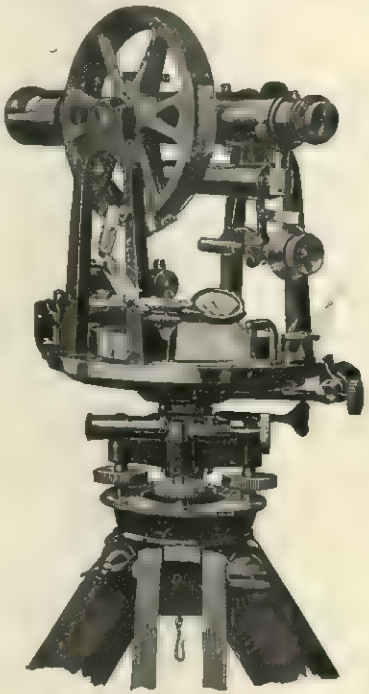
"Buff" Transits, solidly built to resist blows and falls, have metal generously distributed thruout the construction. At the Jamaica Plain Shops, all makes are put in good order and adjustment.

Injured parts of instruments are duplicated from stock in hand. Parts to be repaired should be pointed out in detail. When so ordered, all instruments are put into "thoro order and adjustment" at lowest expense.

References

This company are Instrument Makers to the United States Government, many departments: N. Y. C. R. R.; N. Y., N. H. & H. R. R.; New York Water Board; Public Service Commission, New York City; Board of Public Works, New York City; Standard Oil Co., Guggenheim and Rothschild interests, J. G. White Co., and numerous other engineering organizations.

The Pennsylvania R. R. used "Buff" instruments in large numbers in both their North River and East River Tunnels. The Subway Commission of New York are now using 250 "Buff" instruments.



The Buff Precise Mine Transit No. 3G

The strongest, most accurate line of Mining Instruments. All types and sizes. All the latest improvements.

Send for Catalog No. 95, to Boston, Mass.

Use a Buff for Accuracy.

FAIRCHANCE LUMBER COMPANY

General Office: FAIRCHANCE, PA.

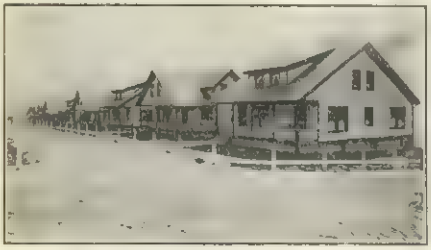
Sales Office: 411 Union Trust Bldg., Pittsburgh, Pa.

Industrial Housing

Mine and Industrial Buildings of All Types

Forty Years in Business

Building houses for coal companies and industrial concerns for over forty years is a noteworthy record of achievement. A rigid policy of giving "a full dollar's value for every dollar received" is the foundation upon which our business has been built, and which has made us the mainstay of our hundreds of satisfied clients in solving their housing problems.



Foremen's Houses in Library Group

Expert service for your housing problems without obligation.

Our construction superintendent has been building miners' houses for 30 years. He will inspect your property and make suggestions to your engineering department on the layout of your mining village that may save you thousands of dollars.

We will submit plans and specifications gladly without obligation.

Why not take advantage of this service by practical, experienced men.

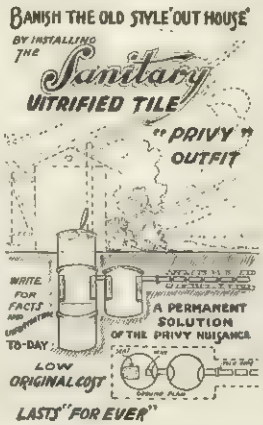
We manufacture and erect ready cut houses of every description. We submit preliminary estimates from your own plans without charge.

We will make suggestions as to construction, materials available, etc.

The largest corporations have used our service.

Miner's Houses in Library Group

Write us for booklet, "Building an Industrial City."



Sanitary
Septic
Tanks

Write for prices.

Any capacity suitable for homes, hotels, school houses.

SANITARY ENGINEERING COMPANY
Union Trust Bldg.
Pittsburgh, Pa.

One Hundred and One Double Houses Built for Pittsburgh Coal Co. at Library, Pa.

E. S. BULLOCK

Main Office

100 Chestnut Street, WILLIAMSPORT, PA.

BRANCH OFFICE—324 Penn St., Huntingdon, Pa.

MILLS AND OPERATIONS AT

Williamsport, Pa. Huntingdon, Pa. Mapleton, Pa. Mill Creek, Pa. Evanston, Pa.

Manufacturers of

Oak Mine Ties, Posts and Mine Lumber

Products

Mine Ties; Pit Posts; White Oak Mine Car Lumber; Hemlock Brattice Boards; Hardwood Mine Rails; White Pine Pattern Lumber; All Grades of Lumber; Tipple Timbers; Oak Bills; Building Lumber for Miners' Houses.

Facilities

With seven lumber mills (including one large Band Mill), and an estimated supply of fifteen million feet of Pennsylvania Hemlock and Old Growth Yellow Pine, we are in a position to supply your needs for all kinds of mine lumber.

Tipple timbers or bills can be furnished in all sizes, large or small.

We are also in a position to furnish White Pine pattern lumber from our Huntington mill, where we have close to five hundred thousand feet of this kind of timber.

From these mills we shipped during the past year 2314 cars of mine lumber.

We believe that the mines desire their orders for material filled promptly, and for this reason we carry in stock at all times at our different works 50 cars of mine lumber.

Experience

Seventeen years' experience in the manufacture of mine lumber.

Guarantee

All products guaranteed to be first class stock.

WRITE FOR QUOTATIONS

160 4x6x6½ Ft. Mine Ties

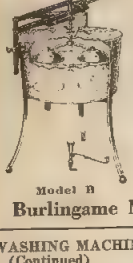
Stocks

We have in stock for immediate shipment the following:

Mine and Railroad Ties	Mine Posts
3 x 5 x 5½ ft.	6 ft. Standard
4 x 5 x 5½ ft.	7 ft. Standard
5 x 6 x 5½ ft.	8 ft. Standard
6 x 6 x 6 ft.	8 ft. Round
7 x 9 x 8½ ft.	7 ft. Round
3 x 4 Mine Rails	10 ft. Round

Mine Car Oak cut to special order; Brattice Boards always in stock.

"Vac Cup" Semi-Automatic Vacuum Washers



Model B

Your customers who want a mechanical washer, but who for some reason do not wish to purchase an electric machine, will be delighted with the "Vac Cup." They will appreciate its simplicity; only the lever handle and the revolving cuccups. Its reasonable price will please them.

Lever and Tub Attachment

The "Vac Cup" attachment transforms a galvanized tub to one of the most efficient washing machines in only a few seconds. Will wash a tub of clothes in five to ten minutes clean and without wear. Vacuum and air suction principle. The Model B is the "Vac Cup" Washer complete with tub and standard. Write for prices and details

Lever attached to ordinary tub

Burlingame Mfg. Co., 407 Sunset Ave., Syracuse, N. Y.

WASHING MACHINES, Clothes, Hand Power (Continued)

Pastime—See Maytag Co.
Pendulum—See Voss Bros. Mfg. Co.
Perfection—See Edwards Mfg. Co.
Perfection—See Boss Washing Mach. Co.
Premier—See Knoll Mfg. Co.
Quality—See Blackstone Mfg. Co.
Queen—See Knoll Mfg. Co.
Quick Action—See Davenport Washing Mach. Co.
Regal—See Blackstone Mfg. Co.
Richmond Cedar Wks., Richmond, Va. "Clipper," "F. F. V.," "Lightning," "Majestic," "Matchel"
Ross, C. E., Lincoln, Ill. "World's Washer"
Royal—See Knoll Mfg. Co.
Safety High Speed—See Superior Mach. Co.
Sandusky Washer Co., Sandusky, O. "One Minute"
Snowball—See Davenport Washing Mach. Co.
Sunshine—See Voss Bros. Mfg. Co.
Superior Mach. Co., Sterling, Ill. "Safety High Speed"
Superior—See Wayne Mfg. Co.
Syracuse Washer Co., Syracuse, N. Y. "Easy"
Two-in-One—See Cisek Bros. Mfg. Co.
Two-Speed—See Michigan Washing Mach. Co.
Uneeda—See Boss Washing Mach. Co.
United Engine Co., Lansing, Mich
Vac Cup—See Burlingame Mfg. Co.
Vacuum—See Horton Mfg. Co.
Voss Bros. Mfg. Co., Davenport, Ia. "Eclipse," "Ocean Wave," "Pendulum," "Sunshine"
Wamanco—See Wayne Mfg. Co.
Wayne Mfg. Co., 124 Sydney, St. Louis, Mo. "Superior," "Wamanco"
Wendell Vacuum Washer Co., Leipsic, O.
Western—See Brammer (H. F.) Mfg. Co.
White Lily Mfg. Co., Davenport, Ia. "Hummer"
Woman's Friend—See Dexter Co.
Woman's Friend—See Foeston Mfg. Co.
World's Washer—See Ross, C. E.
X. L.—See Boss Washing Mach. Co.

WASHING MACHINES, Clothes, Toy

Jefferson Electric Mfg. Co., 430 S. Green, Chicago, Ill. "Jiffy-Jeff"
Jiffy-Jeff—See Jefferson Electric Mfg. Co.
Kiddie Washer—See Pioneer Toy & Novelty Co.
Pioneer Toy & Novelty Co., 3620 Charlotte, Pittsburgh, Pa. "Kiddie Washer"

WASHING MACHINES, Clothes, Water Motor

A. B. C.—See Altorfer Bros.
AERoWING—See Boss Washing Machine Co.
Altorfer Bros. Co., Peoria, Ill. "A. B. C."
American Washer Co., 120 Sidney, St. Louis, Mo. "O-Joy"
American Water Motor Co., Columbus, O.
At Last Washer Co., Perry, Ia.
Banner—See Boss Washing Mach. Co.
Blackstone Mfg. Co., Jamestown, N. Y. "Capital," "Dauntless," "Magic"
Boss—See Boss Washing Mach. Co.
Boss Washing Mach. Co., Harris & Pine Sts., Cincinnati, O. "AERoWING," "Banner," "Boss," "2-In-1," "Veribest"
★For descriptive data of the above, see index on page 6
Brammer (H. F.) Mfg. Co., Davenport, Ia. "Water Queen," "Water Witch"
Capital—See Blackstone Mfg. Co
Coffield Washer Co., Dayton, O.
Dauntless—See Blackstone Mfg. Co.
Dexter Co., Fairfield, Ia.
Du Mond Mfg. Co., Cedar Falls, Ia. "Klean Quick"
Easiest Way Mfg. Co., Sandusky, O.
Horton Mfg. Co., Fort Wayne, Ind. "Peerless"
★For descriptive data of the above, see index on page 6
Klean Quick—See Du Mond Mfg. Co.
Knoll Mfg. Co., Reading, Pa. "Queen"
Magic—See Blackstone Mfg. Co.
Mermaid Dish Washer Co., Middletown, Conn.
Michigan Washing Mach. Co., Muskegon, Mich. "Niagara," "Premier"
1900 Washer Co., Binghamton, N. Y.
Niagara—See Michigan Washing Mach. Co.
O-Joy—See American Washer Co.
One Minute—See Sandusky Washer Co.
Peerless—See Horton Mfg. Co.
Premier—See Michigan Washing Mach. Co.
Queen—See Knoll Mfg. Co.
R. C. W.—See Richmond Cedar Wks.
Richmond Cedar Wks., Richmond, Va. "R. C. W."
Royal—See Wayne Mfg. Co.
Sandusky Washer Co., Sandusky, O. "One Minute"
2-in-1—See Boss Washing Mach. Co.
United Engine Co., Lansing, Mich.
Veribest—See Boss Washing Mach. Co.
Water Queen—See Brammer (H. F.) Mfg. Co.
Water Witch—See Brammer (H. F.) Mfg. Co.
Wayne Mfg. Co., 124 Sydney, St. Louis, Mo "Royal"
White Lily Mfg. Co., Davenport, Ia.
Yost Superior Co., Springfield, O.

WASHING MACHINES, Dish

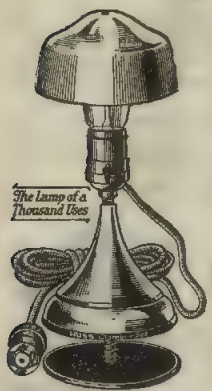
Automatic Dishwasher Co., 2 E. 23rd, New York, N. Y. "Otomatik"
Conover Mfg. Co., 5433 Ravenswood Av., Chicago, Ill.
Dietz Mfg. Co., Findlay, Cincinnati, O "Drumfire"
Drumfire—See Dietz Mfg. Co.
Dunn Mfg. Co., 186 N. Dearborn, Chicago, Ill.
Great Western Mfg. Co., La Porte, Ind. "H-B Automatic"
H-B Automatic—See Great Western Mfg. Co.
Holiday—See Household Eng'g Co.
Household Eng'g Co., Springfield, Mass. "Holiday"
Knox Motors Associates, Springfield, Mass.
Mermaid Dish Washer Co., Middletown, Conn.
Metropolitan Eng'g Co., 1250 Atlantic Av., Brooklyn, N. Y.
Otomatik—See Automatic Dishwasher Co.
Success Dish Washer Mach. Co., Wooster, O.
Torrent Utilities Co., 1426 W. 3rd, Cleveland, O.
Wrought Iron Range Co., 5861 Natural Bridge Av., St. Louis, Mo.

WASHING MACHINES, Dish, Electric

Autosan—See Colt's Patent Fire Arms Mfg. Co.
Blakeslee (G. S.) & Co., 52d Av. & W. 19th, Chicago, Ill
Born Steel Range Co., 3945 W. 25th, Cleveland, O.
Champion—See Hamilton-Low Co.
Cinderella Electric Dishwasher Co., 5100 Superior Av., Cleveland, O
Colt's Patent Fire Arms Mfg. Co., Hartford, Conn. "Autosan"
Crescent Washing Mach. Co., New Rochelle, N. Y.
Domestic Appliance Mfg. Co., Springfield, Mass. "Ford"
Dow Mfg. Co., Braintree, Mass.
E-Z Way—See Redmon, Edgar & Redman
Fearless Dishwasher Co., Rochester, N. Y.
Ford—See Domestic Appliance Mfg. Co.
G. R. S.—See General Railway Signal Co
General Railway Signal Co. Rochester, N. Y. "G. R. S."
Greenwood Eng'g Co., 3314 Lancaster Av. Philadelphia, Pa. "Whirlpool"

PORTABLE ELECTRIC

"Buss" Clamp-o-Set.



"Lamp of a Thousand Uses" is really a very good slogan for this "Buss" lamp, as it can be placed practically anywhere and in almost any position.

Use it in the home for: reading, sewing, dressing, shaving, cooking, dish washing, etc. Use in kitcen, living room, bed rooms, halls, closets, bath rooms, pantry, attic, basement, laundry, fruit cellar, garage, outhouse, etc. Clamp, stand, or hang on beds, walls, chairs, tables, desks, piano, book cases, radiators, pipes, range, automobile, sewing machine, etc.

Use in industry for: offices, washrooms, shipping rooms, drafting rooms, store rooms, vault, garage, factory, work shop, laboratory, etc. Clamp, stand or hang on desks, file cabinets, tables, lockers, chairs, wall, pillars, posts, floor radiators, pipes, machines, lathes, presses, work benches, etc.

The ball and socket joint permits the lamp to swivel and angle to any position and stay put without any adjustment.

A screw threaded clamp in the base makes it possible to clamp the lamp any place, including posts or rods from 1-16 to 2½ inch diameter.

A hole and slot in the clamp permits the lamp to be hung on a nail or hook.

The well distributed weight in the base makes the lamp an excellent stand lamp. Height 11 inches. Shade is held on lamp bulb and is adjustable to any position. Inside of shade is aluminum finish. Nine feet of new code approved mercerized parallel cord permits the lamp to reach any part of a room. Separable combination plug, so it connects in screw base sockets or parallel blade receptacles. No twisting of cord. Graceful lines give it an exceptionally artistic appearance. Each lamp is packed in a three color carton which shows 30 different suggested uses.

Clamps, Stands, Hangs

anyplace--anywhere

Sales Help—Each standard package of ten lamps contains a counter display card, 9x12 inches; a show window poster, 18x24 inches; a sample display tag; and a sheet showing newspaper electros which can be obtained free of charge.

"Buss" Lamps—Brushed brass finish; weight, each, 2 lbs.
Each $2.00

One in a carton.

ELECTRIC LAMP GUARDS

LAXON

Protects against loss by breakage, by fire caused by the breakage of lamps or by lamps coming in contact with inflammable material.

No. 1425—For 25-60 watt 110 volt with standard socket; weight, per dozen, 3 lbs. Per dozen.....$7.40

No. 1427—For 25-60 watt 110 volt with standard socket; weight, per dozen, 3 lbs. Per dozen..... 7.40

One dozen in a package.

NOTE.—One key with every dozen guards. Extra keys 10c each, net $1.00 per dozen.

PROTECTOR "O"

This is a strong and rigid guard. The open bottom is convenient for quick and easy lamp exchange. Fastens to socket with metal band and set screw.

No. 1429—For 60 watt lamp, standard socket; weight, per dozen, 3 pounds. Per dozen $5.60

No. 1432—For 60 watt lamp, weatherproof socket; weight, per dozen, 5 pounds. Per dozen 5.60

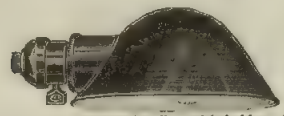
One dozen in a carton.

METAL SHADES AND REFLECTORS

Deep cone shape, with turned edge Green outside, frosted inside.

For 25 to 40 watt lamps.

Nos.	Material	Depth, In.	Std. Pkg.	Each
6548	Brush Brass	5¼	48	$1.15
6549	Aluminum	5¼	36	1.20



Parabola; brass extended collar with holder; diameter 7 inches, depth 3 inches. Swivels easily on the socket permitting light to be thrown at any angle.

No. 5571—Brush brass finish; standard package 48.
Each $1.84

No. 5461—Aluminum finish; standard package 24.
Each 1.92

HUBBELL METAL REFLECTORS

Half Reflectors.

Half shade style, turned edge; brass collar and contractile split ring; adapted for 25 to 60 watt incandescent lamps; length 6⅛ inches, depth 1½ inches; 2½ inch holder.

No. 5429—Steel; green outside, frosted inside.
Each $0.50

One in a box, 50 in standard package; weight 20 lbs.

Paint Enameled Reflectors.

Flat shape, with turned edge, brass collar and contractile split ring; green outside, white inside; for 2¼ inch holder.

Nos.	5431	5432	5433
Diameter, inches	8	10	12
Height, inches	¾	¾	1
Lamp watt	15-25	25-40	40-60
Weight, package, lbs.	40	56	80
Per 100	$44.00	49.00	70.00

Ten in a box, 100 in standard package.

Deep cone shape, with turned edge, brass collar and contractile split ring; green outside, white inside; for 2¼ inch holder.

Nos.	5440	5541	5442
Diameter, inches	8	10	12
Height, inches	3½	4½	5½
Lamp, watt	15-25	25-40	40-60
Weight, package, lbs.	58	80	115
Per 100	$46.00	58.00	100.00

Ten in a box, 100 in standard package.

NEW YORK BELTING & PACKING CO.

New York .91-93 Chambers St.
Boston .65 Pearl St.
Chicago .124-126 West Lake St.
Philadelphia. .821-823 Arch St
Pittsburgh.....420 First Ave.

Denver... .1035 Seventeenth St.
St. Louis 218-220 Chestnut St.
Salt Lake City 65 West 8th South St
El Paso Martin Bldg
San Francisco.....519 Mission St.

Conveyor, Elevator and Transmission Belting

For Other Products See Page 351

Products

Belting: Conveyor, Elevator, Power Transmission.

Hose: Air Drill, Water, Suction, Steam, Fire Protection, Acetylene Welding, Etc.

Packing: Sheet Rubber, Superheat Sheet, Piston, Hydraulic, Valve Stem, Gaskets.

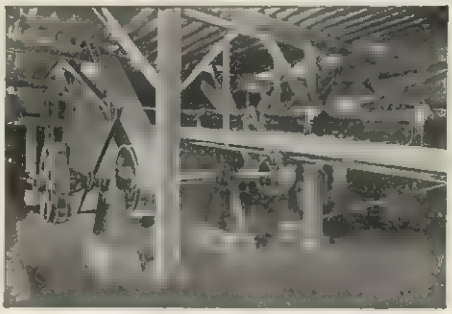
Pump Valves.

Indestructible Conveyor Belting

Our best grade Conveyor Belting, made especially for the heaviest conveying jobs such as ore, crushed stone, coal, cement, coke and every industry where heavy, abrasive materials are carried.

The extraordinary service rendered by Indestructible Conveyor Belting in handling these materials is the result of wear defying construction that comes through the test with lowest tonnage cost. It is primarily a heavy duty belt, designed for your toughest conveying job. The fact that so many Indestructible Belts are employed in this class of work is the best proof of their superiority.

The rubber cover of Indestructible is made of a particularly tough and wear resisting compound that stands to a remarkable degree the abrasive effects of the material carried. The cotton duck used is woven especially for Indestructible Belting. is sufficiently heavy to afford the required strength, flexible enough to conform to the pulleys and so woven as to permit the rubber friction to penetrate every fibre. The friction strength or holding power between the plies is the strongest to be found in any belt.



Test Special Transmission and Indestructible Conveyor Belts in Mill of Utah Consolidated Mining Co., International, Utah

Indestructible is distinctly a quality belt. The many installations in the largest coal and metal mines are giving excellent satisfaction, establishing remarkable records for tonnage of ore carried.

Inspiration Elevator Belting

Built with the necessary strength to stand up in mining work. The cotton duck possesses great tensile strength for lifting heavy loads, and is so made as to remain flexible in service. The rubber cover of Inspiration is tough and elastic and will therefore stand abrasion and the rough handling encountered in this work.

Test Special Transmission Belting

The highest quality belting for all power transmission purposes.

Made from specially woven cotton duck of great tensile strength, the plies of which are inseparably bonded with a rubber friction that retains its adhesion under the hardest service. Waterproof, flexible, strong and durable. Withstands exposure to dust, grit and moisture. Has a friction surface which gives the maximum pulley grip.

Test Special Rubber Belting shows economy in initial cost and its freedom from stretch is a protection against trouble in operation.

Indestructible Conveyor Belting

Catalogs

We issue a general catalog covering all products we manufacture, and special catalogs on Test Special Belting and Packings.

The B. F. Goodrich Rubber Company

Factories: Akron, Ohio

Representatives in All Districts

Conveyor Belts, Elevator Belts, Transmission Belts

Products

For descriptions of Packing, Valves, Steam Hose, Air Hose, Water Hose, etc., see page 349.

Rubber Belting

The economy and superiority of rubber belt over earlier standard types is well established. Their proven merit in pulley adhesion, flexibility, resistance to moisture, lack of stretch, and long life gives them a marked advantage.

During the period of over fifty years that we have been making mechanical rubber goods, Goodrich belts have built a reputation for reliability and satisfactory service that is world wide. This is the result of specialized and expert developments in belting manufacture and of intimate knowledge of belting practice, which enables us to provide you with exactly the belt that you need.

Conveyor Belting

Flexibility, straightness, lack of stretch, and durability are the tests of conveyor belt efficiency. That these features are incorporated in Goodrich conveyor belts is attested by the many big corporations in every industry who have been continuous users of Goodrich belts for years.

"MAXECON"—In coal mines and power plants Maxecon has earned an enviable reputation for carrying coal at the lowest cost per ton. Least breakage, no spillage, uninterrupted operation are assured with Maxecon on your conveyors.

"LONGLIFE"—For average coal conveying Maxecon will prove the most economical, but where there is excessive abrasion, impact of heavy pieces, or unusual strain due to heavy loads on long belts, Longlife with its heavier duck and extra tough cover will pay several times over for the added initial investment.

Elevator Belting

The elevator belt must have great tensile strength, body, grip for bolts, and resistance against snagging, breaking, moisture and abrasion.

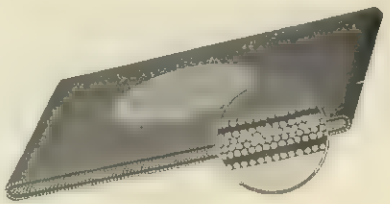
"MOR-ECON"—Rubber covered type. Experience has proven that in average service Mor-Econ is the most economical investment.

"AKRON"—Rubber covered type. For heavier loads and where severe abrasion is a factor there is economy in the purchase of AKRON because of its greater tensile strength and unusually wear-resistant cover.

Transmission Belting

Freedom from stretch, minimum slippage, resistance to moisture, and ability to hold fasteners, determine the fitness and economy of the transmission belt.

"COMMANDER"—Special duck of great tensile strength held together by a rubber binder of great elasticity and unusual ageing quality insures maximum life in Commander. Its friction surface affords better traction. All excess stretch is removed in manufacture so there are no power losses due to slippage. It is moisture-proof, and its heavy duck affords ample anchorage for fasteners. A gum cushion under the outer ply gives added flexibility and does away with the internal friction which so often contributes to the failure of the average belt.



Service

If you have any belting problems to solve or wish detailed information concerning the application of any of our products, we shall deem it a privilege to assist you.

"Satisfactory to Us and praised by Customers"

So says the Dixie Oil Co., one of the oldest oil companies in Memphis.

After trying out various makes of pumps, they equipped their new station, shown above, with FIVE AMERICAN VISIBLES.

And that is the test we most desire. TRYING OUT VARIOUS MAKES. Where speed, cost of operation, continuous and most service hours per dollar of cost are considered—the American Visible always wins out!

Look over the side of this page for some of the reasons for AMERICAN SUPERIORITY.

The American organization has always been to most SUCCESSFUL in the CHEAPEST to MOST ECONOMICAL and with LOWEST PRICED and USERS of the American Visible all over the country say we have exceeded all.

Write for our catalog and prices.

The American Oil Pump & Tank Co.
CINCINNATI, OHIO

American Visible Equipment

And Now, At Last, the News You've Been Waiting For

Two Harold Lloyd comedies, of the same high quality as "Girl Shy," will be released by Pathe during the season of 1924-1925.

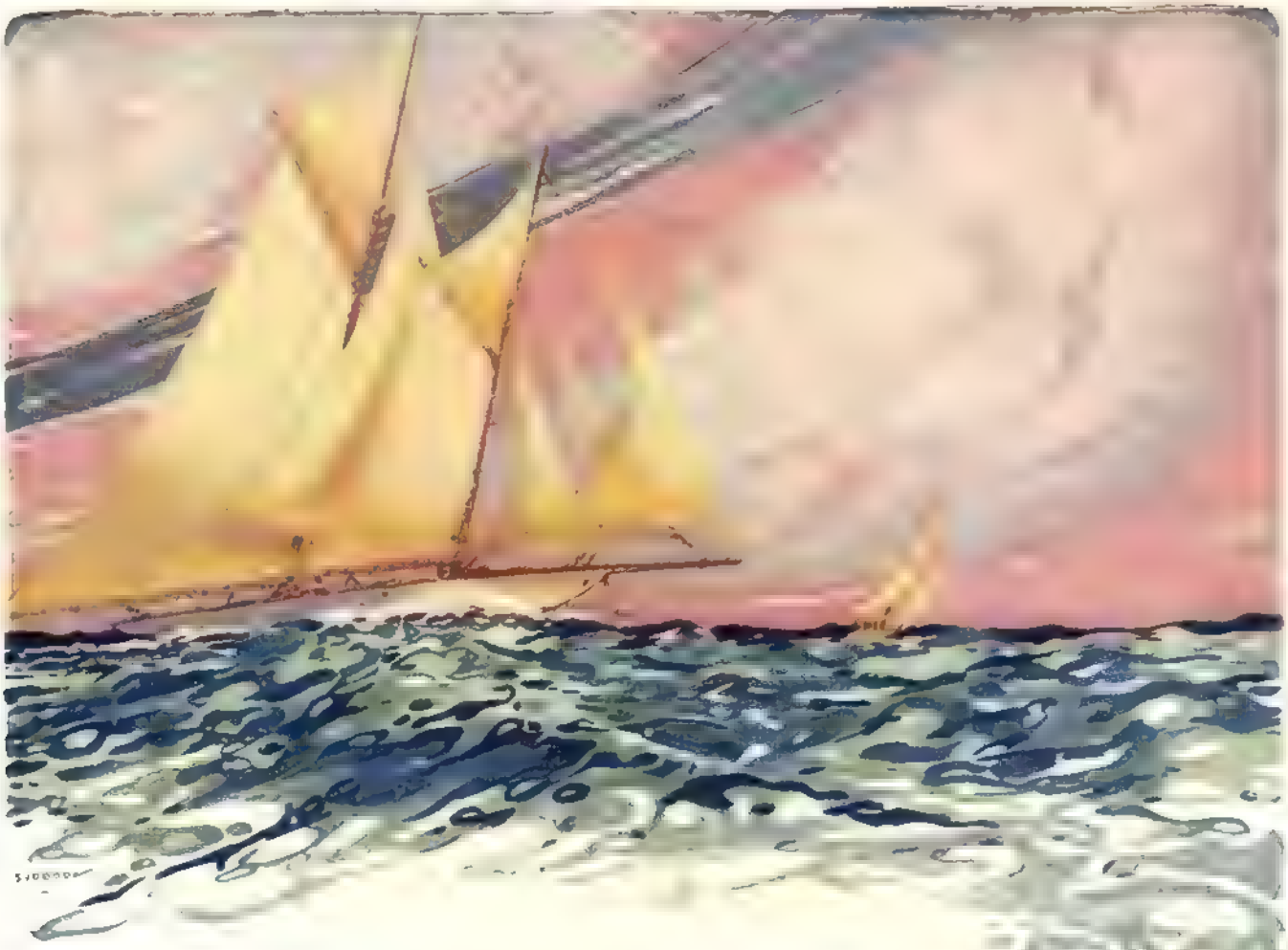
It is fitting that the tenth anniversary of Harold Lloyd as a Pathe star should be celebrated by such an announcement.

Not only is Harold Lloyd the *only* star to be identified for so long a time with one distributor, but his record is also unique in that he has never appeared in an unwholesome picture, or one that was poor.

It is gratifying that a star with so remarkable a record is now acknowledged to be the greatest of all box-office attractions.

Pathe is justly proud to be the distributor of the two Harold Lloyd feature comedies of the season of 1924-1925, worthy successors to "Dr. Jack," "Safety Last!" and "Why Worry?"

A Pathé Picture



Pathé Review

Once A Week

The whole world contributes to the Pathe Review.

Is it travel? Pathe Review has in each number a short bit of the interesting, beautiful and unusual from countries that most persons can never see; and it is in the incomparable Pathecolor.

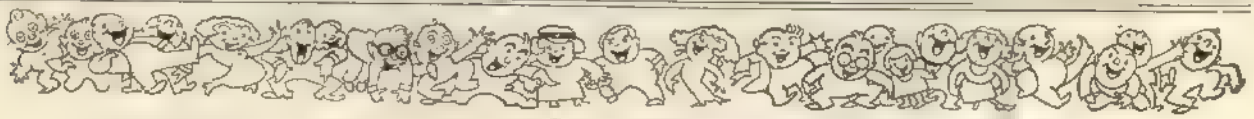
Is it Science? In each number there is some phase of science that is easily understandable, and interesting to all.

Is it Industry? Art? Humor? Nature? They are all in the Pathe Review, only a little of each, but all *good* and in superb photography.

It must be good to be in the Pathé Review.

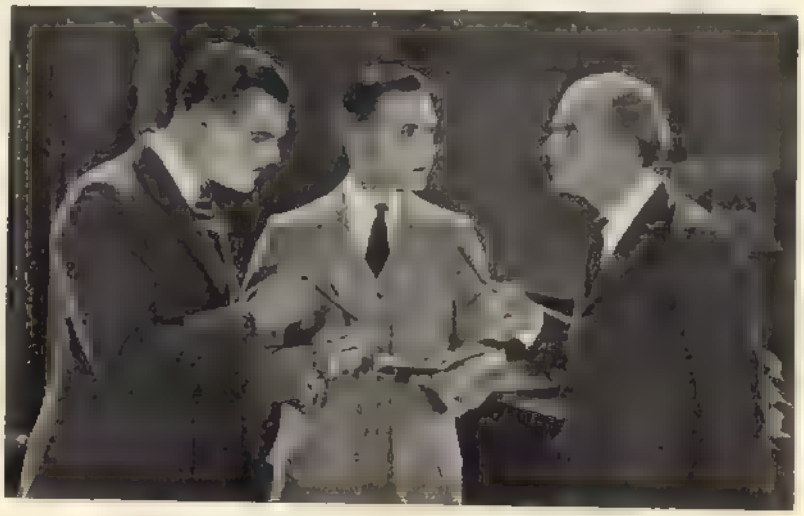
Pathépicture

TRADE MARK



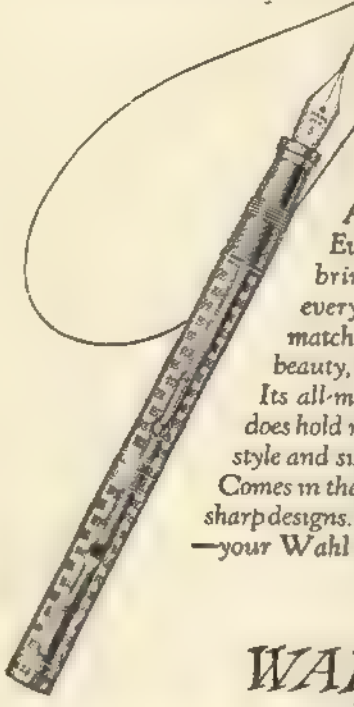
LIVE LOVE AND LAUGH **"Never Say Die"**

? What Pen Did Doug Choose ?



? What Pen Would You Choose ?

It Matches Your Eversharp



As perfect a writing tool as Eversharp, Wahl Pen will bring you comfort and joy every day of the year It matches your Eversharp in beauty, design and quality. Its all-metal barrel actually does hold more ink. There's a style and size for everybody. Comes in the standard Eversharp designs. Come in today —your Wahl Pen is here.

WAHL PEN
MATCHES
EVERSHARP

Write Your Profits With This Tie-Up

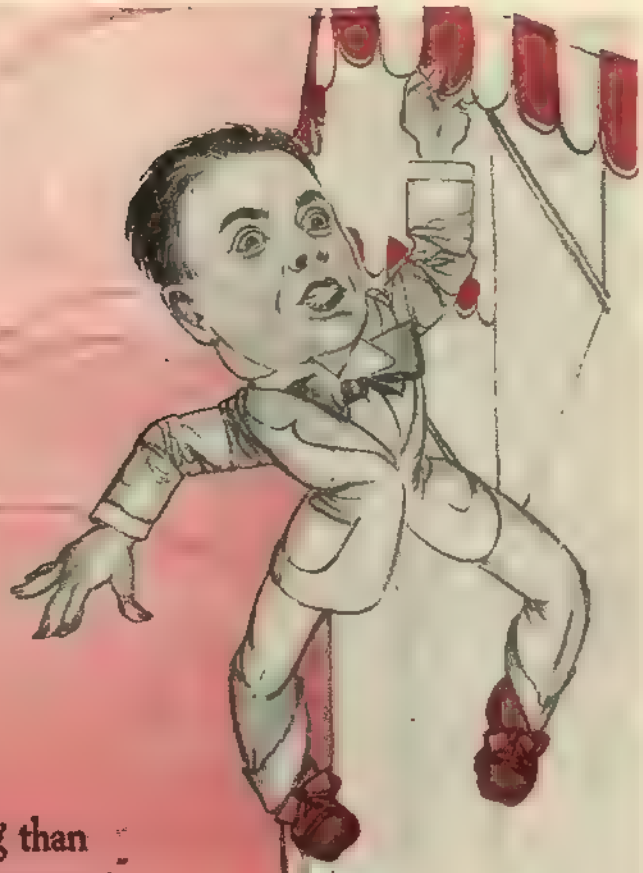
IN the above scene from "Never Say Die" which is "Still No. 96," you see Douglas MacLean being offered two pens, one from Hal Cooley on the left and one from Lucien Littlefield on the right.

Of course, Doug chose the Wahl Pen because he knew it would *write better*—just like his Eversharp Pencil. Of course, so would you. And everyone who will see this stil in a co-operative "Never Say Die"-"Wahl Pen" window display.

In the picture, Doug writes plenty of checks. He wound up with plenty of money —and a beautiful wife—because he never said die!

You will wind up with plenty of profits and be able to write a nice healthy box-office check with a Wahl Pen if you take advantage of this logical tie-up by writing the Exhibitors Trade Review immediately after you have set your play dates on this booking.

That's all you have to do. Costs you not a single penny. And it means every Wahl dealer in your community will be just as willing as you are to enter into this mutually beneficial exploitation.



DOUGLAS MacLEAN

"Never Say Die"

More exciting than "The Hottentot"

More thrills than "Going Up"

Faster than "The Yankee Consul"

"Goes them all one better in laughs"..... M. P. News

ASSOCIATED EXHIBITORS

ARTHUR S. KANE
PRESIDENT

PHYSICAL DISTRIBUTOR
PATHE EXCHANGE INC.

FOREIGN REPRESENTATIVE
SIDNEY GARRETT

VIOLA DANA, MONTE BLUE
LEW CODY, GEORGE SEIGMANN
MARJORIE DAW
EDWARD CONNELLY
KATHLEEN KEY

From Mabel Wagnall's classic story—
THE ROSEBUSH OF A THOUSAND YEARS

Adapted and Directed by
GEORGE D. BAKER

Presented by
LOUIS B. MAYER

Revelation

THE silver dawn creeps over Paris. In a quiet convent near the metropolis a girl who has given unrestrainedly on the Altar of Pleasure learns the gentle message of a Great Teacher, the solace that comes to repentant sinners. "Revelation," a story of artist love from Mabel Wagnall's many editioned best-seller, "The Rosebush of A Thousand Years," brings to audiences Parisian Life such as the screen has never portrayed. A Modern Miracle picture. A great attraction cast with great star names.

A Metro Goldwyn PICTURE

WITH ALL THE WORLD IN RICHES SHE CRIED FOR BREAD

FIFTY editions of this great novel have been absorbed by the public. Enacted by a star-studded cast "Bread" becomes one of the most stirring human dramas in the annals of motion pictures. Portraying the everyday emotions that are the experience in joy and in tears of the millions!

MAE BUSCH
PAT O'MALLEY
MYRTLE STEDMAN
WANDA HAWLEY
ROBERT FRAZER
HOBART BOSWORTH
WARD CRANE
EUGENIE BESSERER

Presented by
LOUIS B. MAYER

A BEST SELLER STORY NOW A PICTURE

adapted by
Lenore Coffey,
Albert Lewyn

A Metro Goldwyn PICTURE

Cadillac Electric Washing Machine

Only washing machine equipped with the famous DISAPPEARING WRINGER which swings and locks at any desired position when in use—and which folds down within cabinet when not in use.

Requires no oiling with the exception of motor which requires cup grease about once a year. All gearings are enclosed within castings and run in oil or grease and all other bearing points are fitted with oilless bearings.

Cover off. Notice how the wringer folds into cabinet when not in use. This feature protects wringer from the ravages of dirt and grease.

Oscillating type—No heavy tub to lift in and out. Thorough, yet gentle washing is assured

Copper tub, tinned on inside. Extra-spacious—Holds 8 sheets or equivalent.

¼ H.P. Westinghouse motor supplies power. Motor is operated directly off ordinary electric light socket. Cord hidden when not in use. Specify current and volts when ordering.

Easy to operate—Both wringer and tub controls placed where operator's hands naturally rest.

Equipped with quick-opening drain faucet. Access to faucet gained by door in cabinet.

Frame is of strong Angle Iron with base curved to allow placing pail directly under faucet for draining purposes. Wringer frame is aluminum and will not rust.

All mechanism is enclosed within cabinet, which is finished in white enamel trimmed with blue. Entire machine mounted on double roll casters which permit it to be easily moved about.

CADILLAC WASHING MACHINE is as handsome as a fine piece of furniture.

Weight, 250 lbs. Size, 24 by 27 inches. 1x 35 inches high.

No. 2857 Price, complete.. . . . . .**$223.50**

The CADILLAC WASHER IS FULLY GUARANTEED FOR ONE YEAR.

Wringer up and swung and locked into position for draining from tub to rinse water. This wringer can be locked into any desired position.

Jewel Electric Vacuum Cleaner

No. 2858

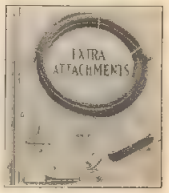
Biggest value ever offered in an electric vacuum cleaner—regardless of price. Made entirely of the finest grade, highly polished aluminum castings. Equipped with an oversize 1/6 H.P. motor which is one of the largest used on any cleaner. (Supplied for from 32 to 250 volts, A.C. or D.C. Specify voltage when ordering.) Has 14-inch nozzle with narrow opening, especially designed to concentrate suction for maximum work on the carpet and to get under low furniture.

The Jewel Electric Vacuum Cleaner has a double row, soft-bristle detachable brush which can be instantly clamped over the lips of the nozzle for removing very stubborn lint, threads and hair.

Has a special non-cramp, pistol grip handle with handy button switch, a fine khaki dust bag with open-at-top feature, a screw on the rear roller to adjust nozzle for long or short nap, twenty feet of cord with separable plug, and many other features.

The Jewel Electric Vacuum Cleaner has the appearance and quality of cleaners selling at much higher prices. It is fully guaranteed for one year against inherent mechanical or electrical defects and with ordinary care should last a lifetime.

No. 2858 Cleaner, without attachments. Each.. . . . . .**$39.00**



Extra Attachments

1. 8 feet, 1¼ inch covered hose.
2. Nipple for hose to connect attachments Nos. 3 and 4.
3. Nozzle for furniture, rugs, mattresses, etc.
4. Brush for woodwork, etc. Hose connection to join hose to cleaner.
5. Extension handle for reaching high places with Nos. 3 and 4.
6. Attachment for use around books, radiators, etc.

No. 2859. Attachments, extra **$15.50**

We Are Same Day Shippers

Send Us Your Rush Orders -Large or Small. *We invariably ship all orders received up to 3 P. M. on the same day, unless goods are to be engraved or made to order.* What we want is your first order, we know others will follow.

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

Electric Table Lamps and Torchiers

Every lamp illustrated on this page is constructed of Silverite Casting metal, on which the finish attains its permanent appearance. Each glass shade is decorated by registered artists and every decoration is exclusive. They are fired in and the colors remain absolutely permanent.

All Lamps are shipped F. O. B. Pittsburgh, Penna.

No. 2860 14 in. round glass shade, full tint in natural colors of winter scene, copy of Master painting, "The Shepherd's Return." Bronze-green base, extreme height 19 in. Each $33.75

No. 2861 Table Lamp. 14 in. round glass shade, full tint floral scene from "The Island of Hawaii." Extreme height 19½ in. Each.....$24.10

No. 2862 16 in. oval glass shade in natural colors, marine scene, conventional design, pedestal base finished in Bart-elect bronze. Extreme height, 21 in. Each $46.50

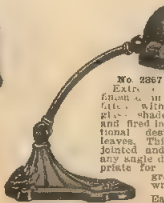
No. 2863 Piano Lamp. 10½ in oval silk shade in blue and gold trimmings. Gold applique border and rosebuds applied in natural colors, butler silver finish base, conventional design. Height, 14½ in. Each. $33.75

No. 2864 Table Lamp Venetian red gold finish metal stand, conventional design, with 24-in round old gold silk shade trimmed in gold applique and 4 in. double silk fringe. Height 29½ in. Each...$60.75

No. 2866 Torchier 61 in. high with glass cylinder shade, length 7 in., diameter 4 in. Full tint decorations in floral marine sunset and conventional design Torchier is finished in gold plated standard and black pedestal on which the torchier is mounted Decoration on cylinder is hand-painted and fired-in on glass, which is superior to mica or parchment. An elaborate new creation which has no equal Each .. .$34.00

No. 2865 Boudoir Lamp. 8 in. oval fluted glass shade, woodland scene, natural colors, mounted on conventional design metal base in antique bronze. Height, 14½ in Each.....$22.25

No. 2866 Boudoir Lamp 7½ in. round shade of Delica glass in assorted colors—pink, blue, tan and white background with garland of roses in natural color Height, 14½ in Each **$12.00**



No. 2867 Piano Lamp Extra heavy [illegible] in, finish of Egyptian gold, fitted with 9x5x3⅜ oval glass shade, hand painted and fired in green conventional design of maple leaves. This lamp is double jointed and can be set at any angle desired Is appropriate for use on upright, grand piano or writing desk.

Each **$26.00**

No. 2868 Boudoir Lamp. A beautiful "Old Ivory" finished Boudoir Lamp with white glass shade satin finished, decorated and tinted by hand. Pink and white decorations. Height, 13⅛ in. Diameter of shade, 5½ in. Each $9.50

Each lamp fitted with a 6-ft. silk-covered cord, plug and sockets.

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

Target Practice Machine

A GAME OF SKILL—NOT A GAMBLING DEVICE

A7922

No Merchandise Given—
Every Cent Profit

ALLOWED EVERYWHERE

Will Make Money
Wherever People Gather

Target Practice Pistol Machine is purely a fascinating game of skill, and the one who plays it cannot get back more than his original penny spent for the pleasure of shooting the pistol. The skillful shot hits the bull's-eye and the penny is returned. Every penny that misses is profit and no merchandise is given away.

The Pistol is a perfect reproduction. Its operation is exceedingly simple. Just insert a penny in the pistol—aim at the bull's-eye—pull the trigger and the penny is delivered with accuracy and speed.

The Cabinet is made of natural color seasoned wood, full nickel trimmed and is very attractive. Size 17 inches long, 7 inches wide, 13 inches high and weighs 18 pounds crated for shipment.

This Machine is a big money maker. From 200.00 to 500.00 per year easily made from one machine if placed in a good location. Here is your opportunity to get into a legitimate business at a small cost. Suppose you start with one machine and keep adding to this.

Suppose You Had 100 Machines that were making only 50c each per day. After paying 25% of the proceeds to merchants for locations, you would have a net profit of 1125.00 per month. Let's cut it in half per day and you would still have an average of 25c each per day, you would still have an income of 562.50 per month.

Thousands of Dollars are made annually by operators of vending machines. Here is your opportunity to start in this big paying business with one of the greatest money makers on the market today.

Each	18.50
Each, in lots of 5,	17.50
Each, in lots of 10,	16.50

— NOTICE —

A7923

Cast Iron Stands Extra, each . . . 3.75

REVOLVERS

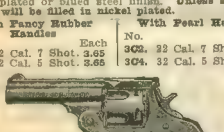
HARRINGTON & RICHARDSON Automatic & Hammerless Revolvers

PRICES QUOTED INCLUDE WAR TAX

HARRINGTON & RICHARDSON AUTOMATIC AND HAMMERLESS REVOLVERS are standard in design, barrel of drop forged high quality steel, accurately bored and rifled. Working parts are drop forged and scientifically tempered to withstand all strains and shocks.

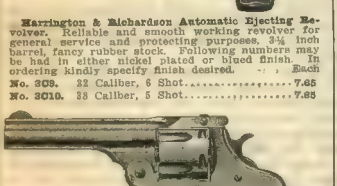
Harrington & Richardson "Young America" Revolver, double action, 7 inch octagon barrel. Shoots S. & W. cartridges, long and short, may be had in nickel plated or blued steel finish. **Unless specified, orders will be filled in nickel plated.**

With Fancy Rubber Handles			With Pearl Handles		
No.		Each	No.		Each
3C1.	22 Cal. 7 Shot.	3.65	3C2.	22 Cal. 7 Shot.	5.25
3C3.	32 Cal. 5 Shot.	3.65	3C4.	32 Cal. 5 Shot.	5.25



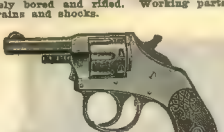
Harrington & Richardson Automatic Ejecting Revolver. Reliable and smooth working revolver for general service and protecting purposes. 3½ inch barrel, fancy rubber stock. Following numbers may be had in either nickel plated or blued finish. In ordering kindly specify finish desired.

		Each
No. 3C9.	22 Caliber, 6 Shot	7.65
No. 3C10.	38 Caliber, 5 Shot	7.65



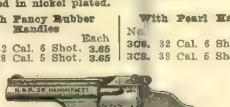
Harrington & Richardson Automatic Shell Ejector, Target Grip Revolver. Has 5 inch fluted barrel, black rubber target grip handle and automatic shell ejector. Barrel is made of drop forged high quality steel, accurately bored and rifled. Working parts are drop forged and scientifically tempered to withstand all strains and shocks. Shoots 32 and 38 S. & W. center fire cartridges. The numbers listed below may be had in nickel as well as blued finish. In ordering kindly state finish desired.

		Each
No. 3C63.	32 Cal. 6 Shot	8.75
No. 3C54.	38 Cal. 5 Shot	9.75



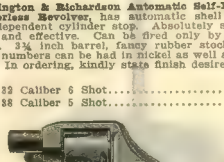
Harrington & Richardson "American" Double Action Revolver, standard arm at a low price carefully and accurately made and a good shooter. 2½ inch octagon barrel, fancy rubber stock; shoots S. & W. long and short cartridges. May be had in nickel plated or blued finish. **Unless specified, orders will be filled in nickel plated.**

With Fancy Rubber Handles			With Pearl Handles		
No.		Each	No.		Each
3C5.	32 Cal. 6 Shot.	3.65	3C6.	32 Cal. 6 Shot	5.25
3C7.	38 Cal. 5 Shot.	3.65	3C8.	38 Cal. 6 Shot.	5.25



Harrington & Richardson Automatic Self-Ejecting Hammerless Revolver, has automatic shell ejector and independent cylinder stop. Absolutely safe, reliable, and effective. Can be fired only by pulling trigger. 3¼ inch barrel, fancy rubber stock. Following numbers can be had in nickel as well as blued finish. In ordering, kindly state finish desired.

No.		Each
3C11.	32 Caliber 6 Shot	8.25
3C12.	38 Caliber 5 Shot	8.25



Harrington & Richardson Vest Pocket Safety Hammer Revolver. Made special for pocket use and possesses same desirable features as higher priced guns. 22 caliber, 7 shot. 1¼ inch round barrel, highly polished and nickel plated.

No. 3C34. With Fancy Rubber Handle.	No. 3C46. With Pearl Handle.
Each 3.65	Each 5.25

GRAND DOLL ASSORTMENT

Assembled especially for use at Churches, Fairs, Bazaars, Carnivals.

The fanciest and largest Mamma Dolls on the market. All with guaranteed Ronson Voices; also four kinds of fancy sateen and ostrich plume dressed carnival dolls, a total of 48 dolls as follows:

12 24-Inch Mamma Dolls.
6 21-Inch Exquisitely dressed Mamma Dolls with real hair and composition legs.
20 assorted, fancy dressed, so-called Kewpie Style. Unbreakable, composition 16 in. carnival dolls. Four different kinds of dresses.

Every doll in individual box. The entire assortment packed ready for shipment in wooden box.

No. 34W44. Per assortment of 48 dolls..... **47.50**

Jointed Celluloid and China Dolls

3 and 3½ Inch Celluloid Jointed Dolls

This stock just received. Strong, fresh elastic holds arms and legs at joints. Hand painted hair, eyes, etc Good weight celluloid. Nicely moulded.

3 Inch Doll. 6 doz in box	3½ Inch Doll. 1 doz in box.
No. 34N88.	No. 34N91.
Gross.. 3.75	Gross 4.50
Dozen... .33	Dozen... .40

4½ and 5 Inch Celluloid Jointed Fat Body Doll

These are Full Size Dolls with fat bodies in full proportion to legs. Arms and legs jointed to body with strong elastic Well molded. The hair, eyes, cheeks and lips are hand painted. Body flesh color, good weight celluloid. Packed one dozen in box

4½ Inch Doll.	5 Inch Doll.
No. 34N93.	No. 34N36.
Gross.. 8.50	Gross... 9.00
Dozen... .72	Dozen... .80

7-Inch Celluloid Jointed Doll

Very handsome full Seven Inch Doll with arms and legs jointed to body. Beautifully proportioned. Delicately hand tinted face, hair, eyes, and lips. Seams most carefully matched. Fresh resilient elastic. Heavy gauge celluloid. A doll any child will love. One dozen in box.

No. 34N94. Per dozen.. 2.00

6½-Inch Full Jointed Celluloid Dolls

These dolls average 7⅛ inches long. Made of strong celluloid. Cute faces painted. Three styles—Buster Brown, Bathing Girl and Naked Baby. All of them jointed at shoulders and hips. Packed one dozen in box.

No. 34N58. Bathing Girl. Per dozen.... Out

No. 34N55. Buster Brown. Per dozen.. Out

No. 34N59. Naked Baby. Per dozen... 2.00

Celluloid Doll

REAL HAIR NET

REAL OSTRICH PLUMES

Surprisingly Beautiful 5½ Inch Celluloid Doll with real hair wig, blonde, henna, etc., real hair and face net, also a gorgeous girdle of real ostrich plumes, assorted contrasting colors. Very beautiful, new and appealing. Packed one doz. assorted in box.

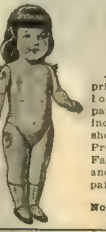
No. 36N50. Per doz. 2.00

Novelty Dolls — Bisque (China) Jointed Dolls

10½-Inch Doll

Almost a foot high. Clown Doll. Composition head, hand painted in realistic colors. Body made of good grade of felt in two contrasting bright colors and well stuffed. Arms jointed at shoulders. Ideal for babies. Very light. Body is soft. Packed one dozen in box.

No. 5N309. Per doz.. 1.80



6½-Inch Doll with Hair

A big doll for the price. Bisque, with long hair (not painted). Full 6¼ inch. Jointed at shoulders and hips. Pretty face, tinted. Fat body. Shoes and stockings, painted.

No. 35N73. Doz. 1.95

Jointed (Bisque) Girl Dolls

PRETTY FACE

Pretty Girl Dolls with painted bow ribbon, yellow painted hair, fat bodies, arms jointed at shoulders, legs at hips. Two sizes.

3½ Inch Doll.	5½ Inch Doll.
No. 35N71.	No. 35N70.
Gross.. 4.25	Gross.. 9.00
Dozen.. .38	Dozen.. .80

ROSE O'NEILL KEWPIE DOLL

Full 5½ Inch Genuine Bisque Rose O'Neill Kewpie Doll. Exquisitely tinted and hand painted by a real artist. Even the eyelashes are shown. Not the ordinary cheap looking Kewpie but a wonderful bisque doll that we are glad to recommend and stand behind. Movable arms. Packed one dozen in a box

No. 35N60. Doz. 2.25

Jewelry Spindle Wheel

"On the Square"

No. H561. Jewelry Spindle. The improved model, an easy road to wealth; the most complete jewelry spindle offered anywhere in the market at this moderate price. It is not of the cheap kind, but of the regulation style and finish made for the sporting goods trade; used in club rooms, fine in make-up and efficiency, equal to any $26.00 machine out. The layout is hand painted on best enameled cloth in colors, looks as finely and will wear as well as the best layouts made; full size 28x28 inches, especially designed for jewelry business. Any wide-awake operator may get in a couple of hours of work at the small price of 10 cents a whirl, a profit of $15.00 to $20.00. Church fairs and bazaars find these an efficient means for lifting mortgages. For spindle without goods.... 9.50

No. P113. Jewelry Spindle Outfit. This includes one spindle as above described, with the following well selected lines of attractive jewelry, and large flash pieces, in all 2549 pieces.

1 only Watch,	72	only Hat Pins,
1 only G. P. Clock,	36	Waist Pin Sets,
1 only 9 Pce. Toilet Set,	288	only Beauty Pins,
1 only Fountain Pen,	432	only Scarf Pins,
12 only Safety Razors,	432	only Cuff Links,
12 only Razor Hones,	720	only Collar Buttons,
1 only Flash Light,	72	only 4 Piece Collar Button Sets,
12 only Watch Fobs,	288	only Assorted Rings,
12 only Watch Chains,	144	only Brooches,
12 only Neck Chains,	2549	Articles of staple goods.

Per outfit, complete with Spindle..... 40.50

Note: The above outfit should realize a net profit of $215.40 at 10 cents a throw.

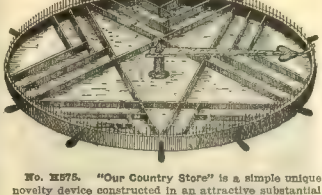
Roll Admission Tickets

No. H513. Roll Admission Tickets, for bazaars, picnics, etc. Each ticket printed admit one. 2,000 tickets to a roll. No less sold. Per roll..... .60

Our Country Store

Merchandise Selling Device

Solid Wooden Bottom



No. H575. "Our Country Store" is a simple unique novelty device constructed in an attractive substantial manner, round shape, divided into various triangle form sections with a post center on which is an affixed stationary arrow with pointer. These sections are filled with goods. The whole "Country Store" device is spun, whirls rapidly and finally stops. The pointer indicates the article or choice of articles the customer gets. A great variety of merchandise may be employed in this business. There are no chances and no misses. Everybody gets a good value and the operator makes good profit. This is one of the latest unique devices for selling merchandise. A very successful plan at all carnivals, picnics, fair or indoor bazaars, 36 inches in diameter, divided into numerous spaces, 5 large ones to contain big articles for "flashes." Absolutely legitimate, can be operated everywhere. Per each device..... 12.50

ASSORTMENT OF VARIETY GOODS SUITABLE FOR "OUR COUNTRY STORE."

No. P 116. This assortment is made up of staple notional variety goods such as thread, hooks and eyes, tape, packages of pins, shoelaces, darning cotton, sewing needles, paring knives, pencils, thimbles, pearl buttons, arm bands, tape measures, ironing wax, dressing combs, key chains, court plaster, bachelor buttons, collar buttons, kettle knobs, etc.

In this lot we include the following Flashy Goods: Clock, watch, 8-piece silver set, jewel box, gold plated mirror, combination silver sugar bowl with spoon rack. In all 506 pieces for total of..... 12.50

ASSORTMENT OF JEWELRY SUITABLE FOR "OUR COUNTRY STORE."

No. P117. Assortment consists of 1,002 pieces of attractive jewelry, embracing scarf pins, brooches, belt pins, shirt studs, collar button sets, silk fobs, neck chains and lockets, assortment of rings, cuff links, hat pins.

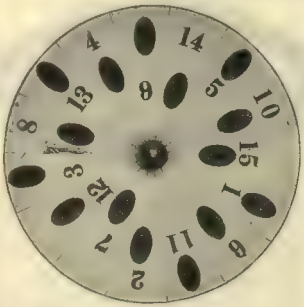
INCLUDING THESE SPECIAL FLASHES.

Watch, flashlight, clock, brush set, manicure sets, etc. All of these goods are attractive and at 5 cents a throw brings in a net of $50.00 in returns, a profit of $38.00. That should satisfy most anybody on so small an investment. The whole scheme is one that may be termed "magnetic." It attracts and holds the people interested. They will spend money at "Our Country Store" because this is no chance game. Everybody gets their money's worth.

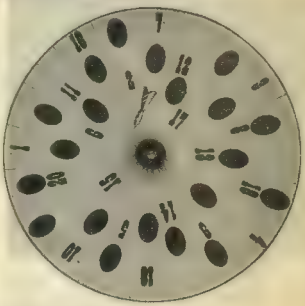
Total per 1,002 pieces..... 12.00

Revolving Dart Boards

Works the same as a wheel and can be used in closed territory. This has proven very satisfactory.



No. H630. 15 Number, 5 Space.
One Red and Four White..... 7.00

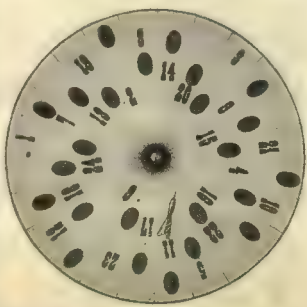


No. H631. 20 Number, 5 Space.
One Red and Four White..... 7.00

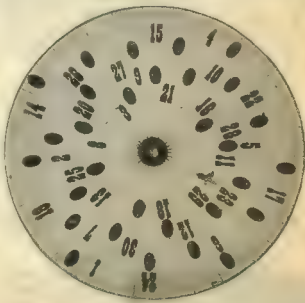
Feather Darts
No. N3138.
Per gross... 6.00
Per dozen.... .55

These boards work like wheels, that is with a lay down chart, allowing one party to throw the dart and who ever has money on number wins a capital or intermediate prize.

Feather Darts Weighted
No. 31N25.
Per gross ... 7.50
Per dozen.... .85



No. H632. 24 Number, 5 Space.
One Red and Four White..... 7.00



No. H633. 30 Number, 5 Space. Each..... 7.00
No. H634. 30 Number, 9 Space.
Each 7.00

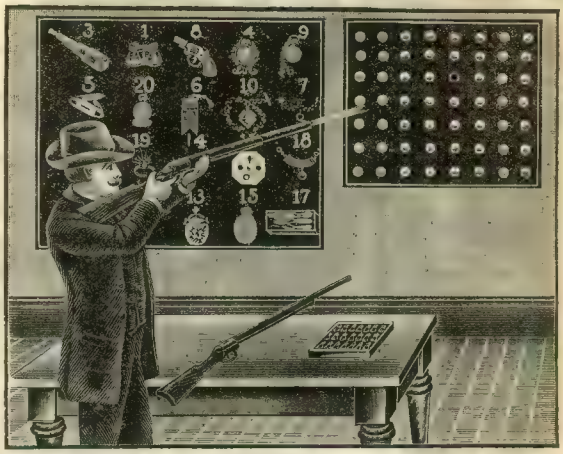
Any Combination Made to Order

SHURE'S WINNER
THE PRICE LIST

Shooting Gallery "Outfit" Complete

Goods, Flashes, Premiums, Guns, Darts, and Tags. Well Selected, All Ready for Business Table and Boards, are shown in the illustration, only to give an idea how to set the gallery up

2500 Pieces Complete for Only $26.00



$26.00 will Put You Into Business for Yourself

make you independent and start you on the road of making good money without drudgery

This outfit costs you $26.00 and will sell for $125.00

Not figuring in the Flash Goods, Rifles, Darts, Etc., which you keep. All you need now to start out is a Tent and a Couple of Good Handy Gasoline Torch Lamps

Shooting Gallery Outfit has proven to be a popular game and is bound to make big money for you. We furnish this outfit complete and with a little effort you can put up a very attractive gallery. The idea of the game is to number the tags on one side to suit yourself so your prizes will be given out accordingly. These tags are then tacked on a board like our illustration shows and the player shoots darts at them which is furnished with the outfit. The player is charged for shooting and shoots until he hits one of the tags. The tag is then removed from board and he receives the premium which corresponds to the number on tag.

The assortment consists of 2 air rifles, 48 darts, 1000 paper tags, 36 target birds and 1414 pieces of merchandise carefully selected and most suitable for the game.

No. P118. Per outfit complete..... **26.00**

Improved Jewelry Spindle Outfit

A popular game suitable for fairs, picnics, bazaars, concessions, etc. This outfit shows big profits as our assortment of jewelry is so divided that one can dispose of the entire assortment and always keep the spindle looking attractive. The assortment of jewelry contains many flashy items such as a watch, clock, bracelets, lavallieres, gold plated knives, scarf pins, brooches, rings, etc. To get the big play be sure to have one of these spindle outfits at the next affair.

The outfit contains 1286 pieces of assorted jewelry and one jewelry spindle.

No. P114 Complete Outfit . . 15.50

We can furnish extra spindles like we use in this outfit if wanted.

No. HS1150 Spindle Only Each 3.00

MOTOR CLOCKS

Mansfield.

Mansfield Motor Clocks enclose within the compact design of a watch case the sturdy mechanism of a clock movement. This in turn is combined with an especially constructed vibration proof frame of nickel silver, finished in either bright nickel or dull satin black.

Nickel silver is used because, unlike brass or other soft metals it will not discolor, spot nor bend out of shape, neither will its finish flake out. A Mansfield Motor Clock is therefore a permanent addition to any car.

Its circular shape conforms in appearance to the other instruments on the dash board. Easily attached by anyone. Simply drill three small holes and drive home the bolts and nuts furnished with each clock.

Stem wind and stem set. Guaranteed for one year against mechanical defects.

Paramount.

The "Paramount" has an artistic silvered dial with particularly graceful hands. Unusual features in a clock of its price. The silvered dial enables you to read the time from any angle.

One piece nickel silver frame complete with bolts and nuts ready for instant attachment to dash of any car. 30 hour movement.

Paramount—Weight, each, — pounds. Each $3.50

Glownite.

The Glownite model has a black dial with "Undark" radium numerals and hands which stand out as clearly in darkness as by day light. A lock-plate completely encloses the clock, enhancing it appearance and affording protection against theft. The Glownite meets every requirement of the motorist and is a useful and attractive addition to any instrument board. Made in bright nickel or dull black. 30 hour movement.

Glownite—Weight, each, — pounds. Each.....$4.50

8-Day Jeweled.

Jewels in a clock or watch are there for a purpose. For the same reason that ball-bearings are placed in a piece of heavier machinery to make it easier running—so the presence of jewels in a clock perform the function of giving it life and accuracy.

An 8 day motor clock, to run properly, should have jewels in the escapement. Decided variations occur otherwise.

The Mansfield Jeweled 8 day motor clock is the closest timing jeweled motor clock ever produced at a low price.

Equipped with front winding and setting device. Beveled glass. Black metal dial with silver numerals and hands. Diameter at back for cowl opening 2⅞ inches. Finished in bright nickel.

8-day Jeweled, Plain—Weight, each, — lbs. Each.$17.50

8-day Jeweled, Luminous—Weight, each, — pounds. Each $19.50

AUTO CLOCKS

Denver Cowl.

Brass Shell or Case.

Made by the Phinney Walker Keyless Clock company, and is the result of their endeavor to give the public the best eight-day key wind clock obtainable to sell for $6.00. It is well made, of good appearance, built to stand hard usage, and the continuous vibration of an automobile.

Panama Cowl—One-day, otherwise same as above.

Each $4.75

ELECTRIC SIDE LAMPS

Small drum type side lamps, of late design, for use in connection with drum head lamps.

Has bolt and nut fastener for attaching to cowl of car by drilling hole and fastening with nut.

Body is drawn in one piece from suitable gauge metal, all plated parts made from brass, therefore rust proof.

Bulbs are 4 c. p., 6-8 volt, single circuit unless otherwise specified.

No. 19—Nickel plated, diameter of door, 2¾ inches; extreme depth, 2½ inches. Per pair.....$4.50
36 pairs in a case; weight, per case, 70 pounds.

SIDE LAMPS

Dandy Junior N. P.

Large drum shape side lamps for use in connection with drum head lamps.

Has bolt and nut for attaching to the cowl of car by drilling hole and fastening with nut.

Body is drawn in one piece from suitable gauge metal all plated parts made from brass therefore rust proof. Bulbs are 4 C. P., 6-8 volt single circuit unless otherwise specified.

No. 23—Nickel plated, diameter of door, 3¼ inches; extreme depth, 2¼ inches. Per pair.....$6.50
36 pairs in a case; weight, per case, 80 pounds.

ELECTRIC TAIL LAMPS

Victor.

A well made tail lamp, with removable lens. Heavy steel frame, inches, ruby semaphore lens 3½ inches. Weight, each, about 1¼ pounds. Each...$1.00 permitting easy replacement of bulb **No. 361**—Front diameter 3¾ black japanned. Each lamp is equipped with 2 c. p. Tungsten bulb. Ediswan base—either double or single wiring system Has latest type off and on switch, enabling lamp to be disconnected very easily. Bulb and socket fastened with screw lock, One in a box.

CAR-DUMPER & EQUIPMENT CO.

1216-1222 E. 75th St., (Grand Crossing), CHICAGO, ILL.
Eastern Sales Office
Westinghouse Building, PITTSBURGH, PA.

Equipment for Handling and Unloading Cars

Products

Rotary Car-Dumpers for All Conditions—Gravity, Electric or Pneumatic Drive.

"Solidcar" Self-Dumping Cages for Shaft Mines.

Mechanical Spraggers. Car Feeders.

Automatic and Manual Cagers for All Conditions.

Weigh Baskets. Slate Disposal Equipment.

Rotary Car-Dumpers for Railroad Gondola Cars.

General Advantages

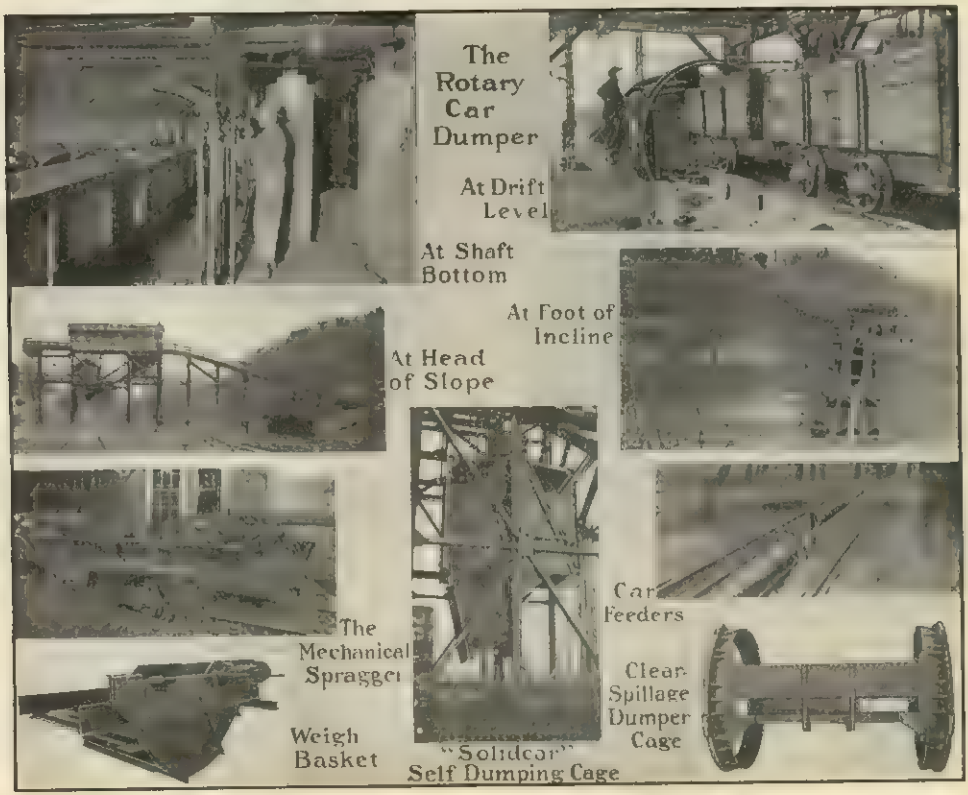
Seven years ago the advantages of Rotary Car-Dumpers were not generally known or appreciated. Today, as the result of the efforts of the engineers of this company in developing the Rotary Car-Dumper and our Car Handling Equipment, its great economies are generally accepted.

Its easier handling of coal, less breakage, much reduced labor costs, lower car cost and maintenance, cleaner roadways, and other valuable safety and earning features are now well known.

Its improvement is continuous—some very important advancements have been made within the past year.

In Your Own Situation

The advantages to be gained by use of different equipments under different conditions are so varied that it is impossible to list them here. Our engineers, however, will be pleased to make a report and a recommendation on study of your specific requirements. Let us know your conditions.



THE MINING SAFETY DEVICE CO.

Office and Works

BOWERSTON, OHIO, U. S. A.

Manufacturers of the

NOLAN Automatic Caging and Feeding Systems—Patented

Products

Automatic Cagers.
Automatic Feeders to Crossover, Kickback and Rotary Dumps.
Automatic Cushioned Horn Stops for Cages and Dumps.
Automatic Block Stops for Cages and Dumps.
Automatic Feeders to Scales and Dump with Stops on Scales.
Hand Operated Feeders.
Single Sets of Cushioned Horns.
Car Retarders.
Other Equipment.

Advantages of Using Nolan Feeders

Rapid and systematic feeding of cars to dump or cage.
Fewer men needed on the bottom or tipple.
Avoidance of wrecks.
No spragging of cars.
No experienced cagers.
Greater output with less expense.

Construction

Every machine built of heavy steel castings, rails, plates and springs of sufficient strength to stand heavy strains. All parts keyed and pinned to shafts. Every machine will stand at least twice the load you will require it to carry.

ANCHORAGE—On all machines amply sufficient to hold heavy trips. No NOLAN ever moves from its anchorgae.

STEEL BASE—If desired a steel base will be furnished to take the place of forms for concrete and heavy ties.

DURABILITY—Cagers installed in 1911 and 1913 are still in use and have recently made bumper records for the mines. Very few repairs have ever been made on them.

SIMPLICITY—Your attention is called to the few parts in a NOLAN. This greatly lessens the friction and danger of breakage.

Nolan Cager With Two Sets of Horns

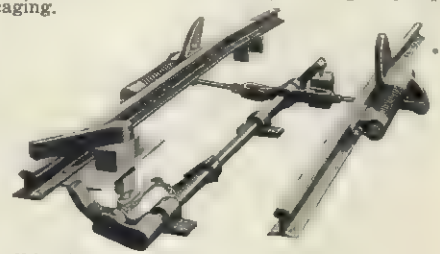
This machine has made the large caging records of the world.

Operated by the cage or dump. The descending cage opens the front horns, allowing the loaded car to pass to the cage, while rear horns close to hold trip in check. As cager rises and its weight is taken from trip crank, the weight (not shown in cut) acts to revolve the rocker shaft, which closes front horns and opens rear ones, allowing the whole trip to advance one car length and stand against front horns. Built in different weights, 60 lb. or 90 lb. rails, to suit various mines. Operates as well with light cars as with heavy ones. Saves two or more men at the mine.

1—Nolan Automatic Cager With Two Sets of Horns. Patented

Nolan Cager With One Set of Horns

Used with any kind of cage or dump. Operated by both the cage and loaded car. As cage seats, the horns open and car passes to cage. In its travel it comes in contact with the reset block across the rail, removing same, which revolves the rocker shaft to close the horns in front of the second car. Opening the horns may be so timed that car is just ready to enter cage as it seats, insuring very rapid caging.



2—Nolan Automatic Feeder or Cager With One Set of Horns. Patented

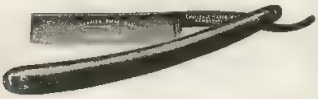
Hinged Trip Cranks

Used only with NOLAN machines. A great convenience. When cage is to be used to hoist men, simply turn hinged portion back on hub, so that feeder will not operate. This saves all spragging.

The NOLANS are in general use with the largest coal mining companies throughout the United States and Canada. Write for "List of Users."

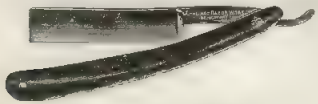
CHALLENGE RAZORS

Challenge Razors are high grade American-made Razors; blades are of the finest quality English steel, Universal temper, carefully ground; hand-hone and sharpened. Each Razor is fully warranted and is in perfect shaving condition.

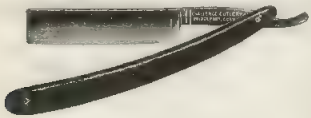


No. 1002—⅝-inch blade, full hollow ground "Rifle Brand," well finished, round black rubber handle..... Per Dozen, $25 20

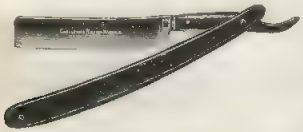
No. 1001—⅝-inch blade, otherwise the same as No. 1002 ..... Per Dozen, $25 20



No. 1502—⅝-inch, extra hollow ground, polished tang, black rubber handle ..... Per Dozen, $34 50



No. 94—⅝-inch blade, round point, extra hollow ground, well finished, round black rubber handle ..... Per Dozen, $34.00



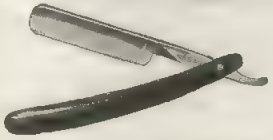
No. 1054—⅝-inch blade, square point, hollow ground, finely finished, black rubber handle ..... Per Dozen, $40 00

No. 1187—⅝-inch blade, round point, hollow ground, fully polished, gilt etched, ivory tang, with black rubber handle. Per Dozen, $40 00

No. 1150—⅝-inch blade, G point, extra hollow ground, fully polished, gilt etched, pearl tang, celluloid handle .Per Dozen, $48 00

No. 993—⅝-inch blade, extra hollow ground, full polished, gilt etched, ivory tang Per Dozen $45 00

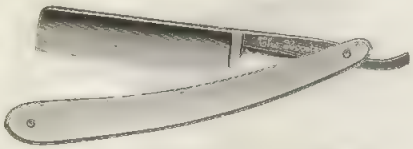
Swedish Steel



No. B512—⅝-in blade, full hollow ground, polished with square point, crocus finished and etched tang, flat black rubber handle ..... Per Dozen, $45 00

No. C432—½-inch blade, ¾ hollow ground, polished blade with round point, crocus finished and etched tang, black rubber handle,..... Per Dozen, $42 00

"Booster," Manganese Pattern.



Booster—⅝ or ¼-inch blade, black square point, hollow ground gun metal tang, white celluloid handle ..... Per Dozen, $30 00

RAZOR ASSORTMENTS

No. 1919K.

An assortment of six high grade Razors, each with different colored celluloid handle, attractively shown in lined display box.

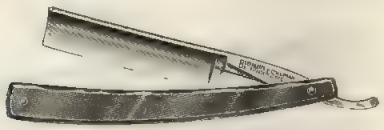
⅝-inch blades, three-quarter ground, square or round points, fine blue glazed finish, polished tangs, flat pattern, finest quality celluloid one each in Ivory, Tortoise, Oak, Transparent Crimson, Blue with White Bevel and Grey with Blue Bevel.

No. 1919K—Assortment of six Razors in display box.... ..... Per Assortment, $20 00

B. M. & S. "BEST MADE STEEL" QUALITY RAZORS

These razors are all made of special analysis razor steel forged under repeated blows of the hammer to insure proper refining of grain, hardened and tempered under pyrometric control, and finished by master grinders. The blades are highly buffed of even thickness, and designed to such an angle as to insure positive results in honing and stropping. Each razor comes ready for use, packed in envelope containing instructions as to best results for shaving, and our guarantee to replace any that prove defective in material or workmanship.

No. 5001 ⅝ inch wide, hone point, special hollow ground, with high bevel, double shoulder, milled tang, set in flat black hard rubber handle.....Per Dozen, $36 00
No. 5003—⅝ inch wide, round head point, otherwise same as No. 5001.....Per Dozen, 36 00
No. 5002—½ inch wide, hone point, otherwise same as No. 5001.....Per Dozen, 36.00
No. 5004—½ inch wide, round head point, otherwise same as No. 5001.....Per Dozen, 36.00
No. 6001 ⅝ inch wide, hone point, ground extra full concave (Hamburg ground) double shoulder, milled tang, wide bevel, flat black hard rubber handle...Per Dozen, 42 00
No. 6003—⅝ inch wide, round head point, otherwise same as No. 6001.....Per Dozen, 42.00
No. 6002—½ inch wide, hone point, otherwise same as No. 6001.....Per Dozen, 42.00
No. 6004—½ inch wide, round head point, otherwise same as No. 6001.....Per Dozen, 42 00

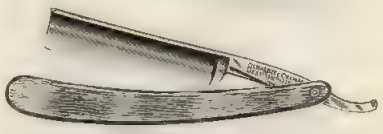


No. 3541—⅝ inch wide, hone point, three-quarter concaved razor, wide bevel, double shoulder, milled tang, set in celluloid wine-colored transparent handle ...Per Dozen, $30.00
No. 3543—½ inch wide, hone point, otherwise same as No. 3541.....Per Dozen, 30 00
No. 3544—½ inch wide, hone point.....Per Dozen, 30 00

No. 3741—⅝ inch wide, hone point, three-quarter concaved razor, wide bevel, double shoulder, milled tang, set in white celluloid handle.....Per Dozen, $30.00
No. 3742—⅝ inch wide, round head point.....Per Dozen, 30.00
No. 3744—½ inch wide, round head point.....Per Dozen, 30.00

No. 1441—⅝ inch wide, hone point, special hollow ground, double shoulder, milled tang, set in tortoise shell celluloid handle .....Per Dozen, $24.00
No. 1442—½ inch wide, hone point.....Per Dozen, 24.00

No. 1561 ⅝ inch wide, hone point, special hollow ground, double shoulder, milled tang, set in gold pearl celluloid handle .....Per Dozen, $24.00



No. 6691 ⅝ inch wide, hone point, ground extra full concave (Hamburg ground), double shoulder, milled tang, wide bevel, celluloid imitation oak handle...Per Dozen, $42 00
No. 6693—⅝ inch wide, round head point, otherwise same as No. 6691.....Per Dozen, 42.00
No. 6694—½ inch wide, round head point, otherwise same as No. 6691.....Per Dozen, 42.00

No. 5821—⅝ inch wide, hone point, ground full concave, with high bevel, double shoulder, milled tang, set in imitation ivory carved handle.....Per Dozen, $44.00
No. 5823—⅝ inch wide, hone head point, otherwise same as No. 5821.....Per Dozen, 44 00
No. 5822—½ inch wide, hone point, otherwise same as No. 5821.....Per Dozen, 44 00
No. 5824—½ inch wide, round head point, otherwise same as No. 5821.....Per Dozen, 44.00

No. 50—⅝ inch wide, barber's square point, ground full concave, double shoulder, set in white celluloid handle .....Per Dozen, $30.00
No. 51—½ inch wide, otherwise same as No. 50..Per Dozen, 30 00
No. 52—⅝ inch wide, barber's square point, full concave, double shoulder, set in tortoise shell, celluloid handle .....Per Dozen, 30.00
No. 53—½ inch wide, otherwise same as No. 52..Per Dozen, 30 00

CIRCULAR SAWS.

FOR FACTORY SHIPMENT ONLY

The cut illustrates various Styles of Teeth for Circular Saws. By referring to this when ordering, customers will be enabled to inform us the style of tooth required, and gauge or thickness per list below.

STANDARD GAUGE

Corresponds Exactly with the Stubb's English Gauge.

Gauge.	Decimals of Inch.	Fractional Part of Inch.	Gauge.	Decimals of Inch.	Fractional Part of Inch.
0000	.454		17	.058	Scant
000	.425		18	.049	Full
00	.380		19	.042	Scant
0	.340	Scant	20	.035	Full
1	.300	Full	21	.032	
2	.284	Full	22	.028	
3	.259	Scant	23	.025	
4	.238	Full	24	.022	
5	.220	Full	25	.020	
6	.203	Scant	26	.018	
7	.180	Scant	27	.016	
8	.165	Scant	28	.014	
9	.148	Full	29	.013	
10	.134	Full	30	.012	
11	.120	Scant	31	.010	
12	.109		32	.009	
13	.095	Full	33	.008	
14	.083	Full	34	.007	
15	.072	Scant	35	.005	
16	.065	Full			

When Sending Saws for Repairs

The Name of Owner Should Appear on Each in order to identify them when received and save delay. Mail us full instructions for the work to be done, stating the hand, speed, and feed of the mill, and shipping directions for the return of the saw.

Mark Package Plainly.

We Can Furnish Either Disston's or Atkins' Circular Saws

Warranty.—Each saw is warranted as true as it is possible to make it, free from flaws and seams. If found to be defective in any of these particulars, it may be returned, WITHIN THIRTY DAYS FROM DELIVERY, and, if we are satisfied that the saw is at fault, all necessary repairs will be made free of charge, or a new saw given in exchange. We do not warrant saws cracked in gumming where the punches and dies are not kept in proper order. The filing of square corners in the gullets will also cause the plate to crack. OUR WARRANTY DOES NOT COVER SUCH CASES.

Instructions.—When ordering, be careful to give the following particulars: Whether rip or cross-cut, right hand or left hand, diameter in inches, number of teeth, thickness or gauge at center, size of mandrel hole, size of pin hole, distance from center to center of pin holes, number of revolutions per minute, kind of lumber to be sawed.

Special Note.—Circular Saws are not carried in stock, and orders are received with the distinct understanding that they are subject to delay in making and are not subject to cancellation under any circumstances.

Patent Ground and Tempered, Solid Tooth, Extra Quality.

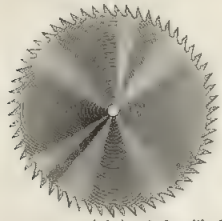
Diameter, Inches.	Thickness, Gauge	Size Hole, Inch	Each.	Extra for Each Additional Gauge (Heavier).	Price for Beveling New Saws (Grinding or Beveling Old Saws Extra).	Extra for Setting and Sharpening if Rip Saw.	Extra for Setting and Sharpening if Cross-cut Saw.
4	19	$\frac{3}{8}$	$ 3.30	$0.07	$0.25	$0.35	$0.45
5	19	$\frac{1}{2}$	3.30	.07	.25	.35	.45
6	18	$\frac{1}{2}$	3.30	.07	.25	.35	.45
7	18	$\frac{1}{2}$	4.40	.10	.35	.40	.55
8	18	$\frac{1}{2}$	4.40	.11	.35	.40	.55
9	17	$\frac{1}{2}$	5.60	.20	.45	.50	.65
10	16	1	5.60	.20	.45	.50	.65
11	16	1	7.00	.30	.55	.60	.75
12	15	1	7.00	.30	.55	.60	.75
14	14	$1\frac{1}{4}$	8.50	.40	.65	.70	.85
16	14	$1\frac{1}{4}$	10.50	.50	.75	.80	.95
18	13	$1\frac{1}{4}$	12.00	.60	.90	.90	1.05
20	13	$1\frac{1}{4}$	15.00	.75	1.05	1.00	1.15
22	12	$1\frac{1}{4}$	17.50	.90	1.20	1.10	1.30
24	11	$1\frac{1}{4}$	20.50	1.05	1.35	1.20	1.45
26	11	$1\frac{1}{4}$	24.00	1.25	1.55	1.30	1.60
28	10	$1\frac{1}{2}$	28.00	1.50	1.75	1.40	1.75
30	10	$1\frac{1}{2}$	32.00	1.75	1.95	1.50	1.95

For Saws one gauge thicker than list, no extra charge

Circular Saws listed above are not carried in stock and can be furnished only by sending direct from factory.

CIRCULAR AND BAND SAWS, FRAMES AND MANDRELS

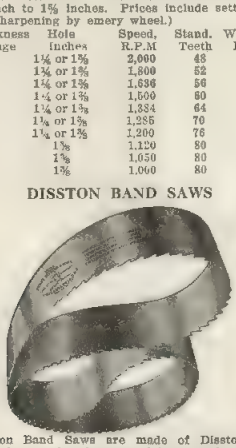
CORDWOOD CIRCULAR SAWS



Cordwood saws are carried in stock with 1¼ or 1⅜-inch arbor holes as listed below. We can furnish from factory any size hole, 1 inch to 1⅝ inches. Prices include setting and hand filing. (Not sharpening by emery wheel.)

Diam. Inches	Thickness Gauge	Hole Inches	Speed, R.P.M	Stand. Teeth	Weight Lbs.	Each
18	13	1¼ or 1⅜	2,000	48	5	$ 4.20
20	13	1¼ or 1⅜	1,800	52	8	5.00
22	12	1¼ or 1⅜	1,636	56	11	5.80
24	11	1¼ or 1⅜	1,500	60	14	6.80
26	11	1¼ or 1⅜	1,384	64	16	8.00
28	10	1¼ or 1⅜	1,285	70	20	9.30
30	10	1¼ or 1⅜	1,200	76	25	10.80
32	10	1⅜	1,120	80	30	12.20
34	9	1⅜	1,050	80	36	16.50
36	9	1⅜	1,000	80	40	19.20

DISSTON BAND SAWS



All Disston Band Saws are made of Disston high grade crucible steel hardened and tempered by special processes

Prices for Band Saws, Set, Sharpened and Joined Complete.

Nos.	14	38	42	58	34	78	100
Width, Inch	¼	⅜	½	⅝	¾	⅞	1
Gauge Nos	21, 22	21, 22	21, 22	21, 22	20, 21	20, 21	20, 21
Per Foot, ...							
shorter than 14 ft.	$0.23	.25	.26½	.28	.30	.33	.36
Per Foot							
14 ft. and longer	.19	.21	.22½	.24	.26	.29	.32

In ordering specify length of saw and gauge wanted.

CHALLENGE WOOD SAW FRAMES

WITHOUT SAW BLADES

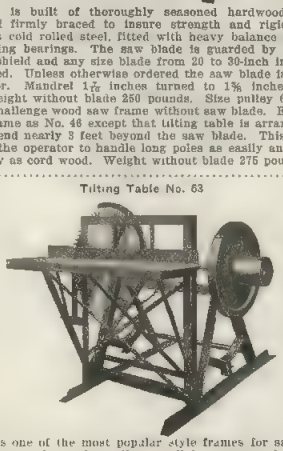
Tilting Table No. 46

Frame is built of thoroughly seasoned hardwood securely bolted and firmly braced to insure strength and rigidity. The mandrel is cold rolled steel, fitted with heavy balance wheel and self-adjusting bearings. The saw blade is guarded by a substantial steel shield and any size blade from 20 to 30-inch in diameter can be used. Unless otherwise ordered the saw blade is to LEFT of operator. Mandrel 1$\frac{7}{16}$ inches turned to 1⅜ inches for saw blade. Weight without blade 250 pounds. Size pulley 6x6 inches.

No. 46—Challenge wood saw frame without saw blade. Each $45.00

No. 47—Same as No. 46 except that tilting table is arranged to extend nearly 3 feet beyond the saw blade. This enables the operator to handle long poles as easily and as rapidly as cord wood. Weight without blade 275 pounds Each $51 00

Tilting Table No. 63

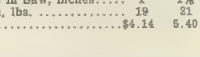


This is one of the most popular style frames for sawing cord wood, but it can be used equally as well for sawing poles. Always furnished for saw blade to left of operator, unless otherwise ordered. The distance from balance wheel to saw blade is 3 feet and the table has a 10-inch extension beyond the blade. Mandrel is 1$\frac{7}{16}$ inches turned to 1⅜ inches for blade. Pulley is 6x6 inches. Weight without blade, 350 pounds.

No. 63—Challenge steel saw frame, without saw blade. Each $49.50

No. 64—Same as No. 63, but furnished with sliding table on roller bearings. Weight 375 pounds. ..... Each $54.80

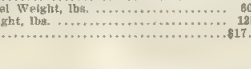
CIRCULAR SAW MANDRELS



When ordering Saw Mandrels state whether pulley is on the right or left-hand side or center of Mandrel when saw is running toward you. **Mandrels are shipped with pulley on left-hand end, unless otherwise ordered.**

Nos.	581	582	583	584	585
Diameter of Pulley, inches	2½	3	3½	4¾	4¾
Face of Pulley, inches	3½	3¾	3¾	5	5¾
Length of Shaft, inches	16	19	21½	24	26
Diameter of Shaft, inches	1$\frac{7}{16}$	1$\frac{7}{16}$	1$\frac{7}{16}$	1$\frac{7}{16}$	1$\frac{7}{16}$
Size of Hole in Saw, inches	1	1⅛	1¼	1⅜	1⅜
Weight each, lbs.	19	21	31	39	39
Each	$4.14	5.40	6.48	8.36	9.10

CORDWOOD SAW MANDRELS



For use on saw frames or for bench sawing. Arbor shaft is 1¼ inches in diameter, fits saws with 1⅜ inch arbor holes Equipped with plain babbeted bearings, Arbor plates, 6x8-inch pulley and balance wheel.

Nos.	568	569
Balance Wheel Weight, lbs.	80	95
Shipping Weight, lbs.	125	160
Each	$17.60	$1.00

Blue Box Line for all cars except Ford

Greater Profit -and Greater Service-

The dealer who urges car owners to install new Champions by the full set makes a greater profit and he renders a real service to the motorist.

Champion engineers have proved, and other leading automotive engineers also, that it is real economy to install a complete set of new spark plugs in a motor car at least once each year.

They will actually pay for themselves many times over, to say nothing of the much better all around performance they make certain.

So you are actually doing the car owner a great service when you urge him to change his spark plugs at regular intervals. You are saving him money and you are making a good business friend.

And you are also making a much greater profit for yourself.

Champion produced two-thirds of all the spark plugs made last year. Yet dealers could multiply their sales and profits three times by urging a regular replacement of plugs.

With your cooperation it is possible to make the economical procedure of changing spark plugs regularly an almost universal practice.

This would mean more money for you and much better satisfied car owners.

Champion X for Fords

Champion Spark Plug Co. Toledo, Ohio
Champion Spark Plug Co. of Canada, Ltd., Windsor, Ont.

CHAMPION

Dependable for Every Engine

Consumer Confidence

Consumer confidence is the most valuable asset any business can have. Merchants who are building sound, permanent business, are exceedingly careful to keep always in mind that their success is absolutely dependent on good will.

The dealer who recommends to car owners that they replace all spark plugs at least once a year is doing the motorist a real favor and is earning his lasting gratitude.

Champion Spark Plug Co., Toledo, Ohio
Champion Spark Plug Co. of Canada, Ltd., Windsor, Ont.

CHAMPION

Dependable for Every Engine

Champion is the standard spark plug for [illegible] and trucks [illegible] Price [illegible] for [illegible] Sole [illegible]

CHARLEROI IRON WORKS

CHARLEROI, PA.

Engineers and Builders of

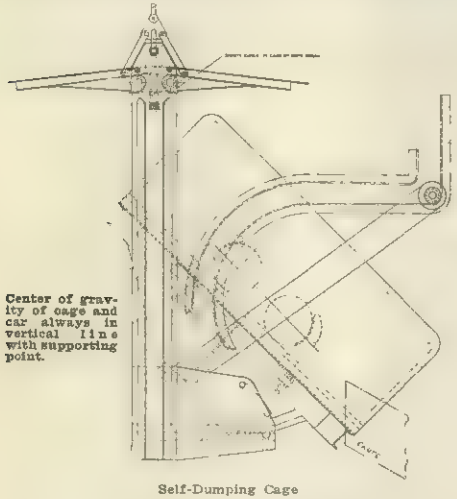
Mine and Mill Equipment

Products

Tipple Equipment; Charleroi Balanced Self-Dumping Cages; Charleroi Automatic Kick Back Dumps; Cross-Over Dumps; Chutes; Straight and Curved Loading Chutes; Gravity Screens; Hoppers; Rope Grips; Rollers; Sheaves; Frogs; Turnouts; Mine Castings.

Charleroi Balanced Self-Dumping Cage

The two cages are always in balance even in dumping position. This means that in starting the hoist, you have full load of cage and car on either rope, eliminating one another, leaving the net weight of coal only for the hoist. This requires a **smaller starting torque** and therefore a **minimum hoisting equipment and power consumption** in comparison with the ordinary pivoted cages, which only distribute less than 60% of the weight on top of cage direct on the rope; the other 40% resting on Dumping Guides,



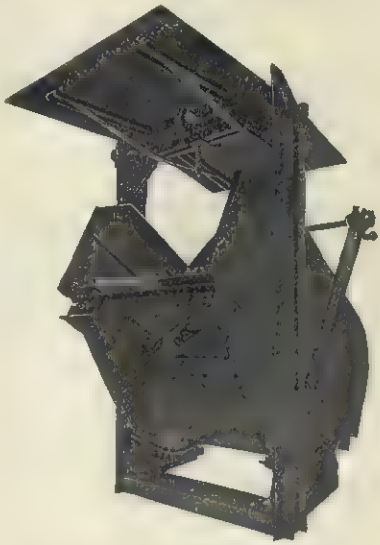
Self-Dumping Cage

giving a larger starting torque and necessitating larger hoisting equipment and power consumption. The Rocker rolls the cage over the chute (not merely tilts it) preventing sudden shocks and strains, prolonging the life of both cage and cars, and allowing a more rapid operation and increased production. The Wide Base insures against accidental dumping of cage in shaft. Cages are equipped with powerful Safety Bull Dog Grips. They are built for rough usage and continuous operation; equipped with either plain horns or Automatic Cushion Horns. Write and ask for references

Charleroi Automatic Kick Back Dump

This dump does not depend upon the Kick Back alone, but on the grades furnished by the two pivoted rails. These rails gradually stop the momentum of the incoming loaded car, which presses the pivoted rails down and holds them in that position while dumping, after which a lock is released elevating the pivoted rails by powerful springs, already compressed by loaded car, giving any desired grade **rolling the empty car right back over the switch.** It will absolutely save a man at the dump. It is safe, economical and built for continuous service. Nothing to get out of order, and of unlimited capacity; made in all gauges and for any size car.

The Pivoted Rail Kick Back Dump



Curved End Loading Chutes and Extension Chutes

Made on a perfect radial form to insure a free run and prevent all breakage of coal. They are equipped with loading fingers giving a perfect topping of cars.

Wire Rope Rollers and Sheave Wheels

Our sheaves are made either plain or lined with hemp rope.

All our rollers are chilled on the surface and can be equipped with stands and pins complete.

Engineering Service

We have a long mine experience and mechanical ability, and are able to cope with any problems in and around your mines and tipples. Your inquiry is solicited. **Write us in regard to any condition of your mine that you wish to improve, and we are at your service.**

A Pen and Pencil for Everybody Everyday. The Chicago Safety Sets

The Fountain Pens are the High Grade Chicago Safety Lever described and quoted in Fountain Section. All Illustrations are Exact Size.

A Combination Fountain Pen and Pencil Set in Plush Lined Presentation Gift Case. Fountain Pen is solid gold mounted and fitted with either No. 2, No. 3 or No. 4 14K solid gold pen point. The Pencil is 12K Gold Filled. Has Eraser under cap and comes equipped with clip and four leads.

No. J9027 With No. 2 14k solid gold pen point fountain pen and pencil, complete set . . . . . $ 9.00

No. J9028 Same as above, except with No. 3 pen point, per set 10.00

No. J9029 Same as above, except with No. 4 pen point, per set 10.50

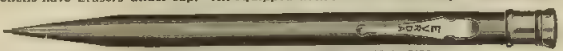
A Combination Fountain Pen and Pencil Set in Plush Lined Presentation Gift Case. Your choice of a Sterling Silver or 14k Gold Filled Fountain Pen. Also choice of a Sterling Silver or 14k Gold Filled Pencil. Fountain pens come with the desirable No. 3 14k Solid Gold Pen point. Pencil has Eraser under cap and is equipped with clip and four leads. A rich checkered design.

No. J9030 Sterling Silver Fountain Pen and Sterling Silver Pencil, per set $11.50

No. J9031 14k Gold Filled Fountain Pen and 14k Gold Filled Pencil, per set 16.00

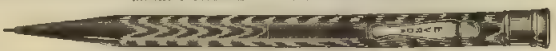
A SMOOTH WORKING AND MOST SATISFACTORY AND SERVICEABLE PENCIL

Your Choice of a Plain, Wave, Block or Checker Design. Made in Nickel Silver, Silver Filled, Sterling Silver, 12K and 14K Gold Filled. All Pencils have Erasers under cap. All equipped with four leads and clip. Illustrations are Exact Size



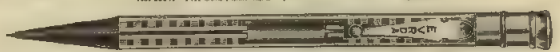
PLAIN DESIGN. EQUIPPED WITH CLIP, ERASER AND FOUR LEADS

No. J9032 Nickel Silver, each $1.25 — No. J9034 Silver Filled, each $1.50
No. J9033 Sterling Silver, each 2.50 — No. J9035 12k Gold Filled each 3.00
No. J9036 14K Gold Filled, each $5.00



WAVE DESIGN. EQUIPPED WITH CLIP, ERASER AND FOUR LEADS

No. J9037 Nickel Silver, each $1.75 — No. J9039 Silver Filled, each $2.00
No. J9038 Sterling Silver, each 3.00 — No. J9040 12K Gold Filled, each 3.50
No. J9041 14K Gold Filled each $5.00



BLOCK DESIGN. EQUIPPED WITH CLIP, ERASER AND FOUR LEADS

No. J9042 Sterling Silver, each $3.00 — No. J9043 12K Gold Filled each $3.50 — No. J9044 14K Gold Filled, each $5.00

CHECKER DESIGN. EQUIPPED WITH CLIP, ERASER AND FOUR LEADS

No. J9045 Sterling Silver, each $3.00 — No. J9046 12K Gold Filled, each $3.50 — No. J9047 14K Gold Filled each $5.00

SHORT PENCIL WITH TOP RING. BLOCK DESIGN. Equipped with Eraser and Four Leads

No. J9048 Sterling Silver each $3.00 — No. J9049 12K Gold Filled each $3.50 — No. J9050 14K Gold Filled, each $5.00

SHORT PENCIL WITH TOP RING. CHECKER DESIGN. Equipped with Eraser and Four Leads

No. J9051 Sterling Silver each $3.00 — No. J9052 14K Gold Filled each $3.50 — No. J9053 14K Gold Filled, each $5.00

SPECIAL SET FOR LADIES

A Combination Fountain Pen and Pencil Set in Plush Lined Presentation Gift Case. Your choice of a Sterling Silver or 14k Gold Filled Fountain Pen. Also choice of Sterling Silver or 14k Gold Filled Pencil. Fountain Pens come with the desirable No. 3 14k Solid Gold Pen Point. Both have rings to attach to ribbon. Pencil has eraser under cap. Also equipped with four leads. A rich waved design.

No. J9061 Sterling Silver Fountain Pen and Sterling Silver Pencil, per set $11.50
No. J9062 14K Gold Filled Fountain Pen and 14K Gold Filled Pencil, per set 16.00

A PEN WITH YOUR PERSONALITY

MANUFACTURED AND GUARANTEED BY THE WAHL CO.
(MAKERS OF THE WORLDS FAMOUS EVERSHARP PENCILS)

GIFTS THAT LAST

THE WAHL FOUNTAIN PENS embody the latest ideas and most scientific principles of fountain pen construction. Years of research and experimenting have developed the **BETTER PEN.** The scientific Wahl comb feed which holds ink in a constant degree of water supply, regulates the flow to the writing speeds. **WAHL PEN** writes at first touch, no scratching or shading being necessary to cause the ink to flow. Each Wahl gold nib is pointed with the finest grade of iridium. When you write with a **WAHL PEN** the only part touching the paper is this fine iridium point, which is extremely hard, smooth, long, polished and beveled to glide. The use of the Wahl nib is a guarantee of many years of writing satisfaction. The built-in Wahl pocket clip holds it securely in your pocket and prevents the pocket from becoming torn or worn out.

Illustrations Actual Size

Short Holder. Grecian Border design. Has nickel self-filling lever and No. 2 Wahl Gold Nib. Length when closed, 3½ inches
No. J9056 Each **$3.85**

Short Holder. Grecian Border design. Equipped with gold filled self-filling lever, and ring in cap for fastening to ribbon or chain. Has No. 2 Wahl Gold Nib. Length when closed, 3½ inches
No. J9057 Each **$3.85**

Regular Size Holder. Grecian Border design. Equipped with nickel self filling lever and No. 2 Wahl Gold Nib. Furnished with nickel roller clip. Length when closed, 5¼ inches
No. J9058 Each **$3.85**

Regular Size Holder. Grecian Border design. Equipped with nickel self filling lever and No. 3 Wahl Gold N.b. Furnished with nickel roller clip as shown. Length when closed, 5¼ inches
No. J9059 Each **$5.25**

Regular Size Holder. Grecian Border design. Equipped with nickel self-filling lever and No. 4 Wahl Gold Nib. Furnished with nickel roller clip as shown. Length when closed, 5¼ inches.
No. J9060 Each **$5.95**

Same design Fountain Pen as above, except fitted with No. 5 Wahl Gold Nib.

The pen point is a trifle larger and the complete fountain pen slightly thicker and heavier. It is a favorite with those that like a heavy fountain pen.
No. J9061 Same design as above, except fitted with No. 5 Wahl Gold Pen, each **$7.35**

Short Holder. Yellow Gold Filled Holder and Barrel. Rich chased design. Equipped with gold filled self-filling lever and ring in cap for fastening to ribbon or chain. Has No. 2 Wahl Gold Nib. Length when closed, 4¼ inches.
No. J9062 Each **$7.00**

Short Holder. Green Gold Filled. Rich Grecian border design. Equipped with gold filled self-filling lever and ring in cap for fastening to ribbon or chain. Has No. 2 Wahl Gold Nib. Length when closed, 4¼ inches.
No. J9063 Each **$9.80**

Regular Size Holder. Green Gold Filled. Rich Grecian border design. Equipped with gold filled self-filling lever and No. 3 Wahl Gold Nib. Has gold filled roller clip. Length when closed, 5¼ inches
No. J9064 Each **$11.20**

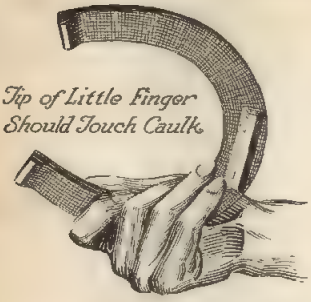
Regular Size Holder. Green Gold Filled. Rich Grecian border design. Equipped with gold filled self-filling lever and No. 4 Wahl Gold Nib. Has gold filled roller clip. Length when closed, 5¼ inches
No. J9065 Each **$12.60**

Quality Products

Quality Products

Regulation

PITCHING SHOES



In three colors to avoid disputes

We make the best drop-forged alloy steel (guaranteed not to break) pitching shoes. Conform in every detail to requirements of the N. H. P. Association. Come boxed in pairs of two, enameled in Black, Harrow Blue or Wagon Red. Weight 2½ lbs. Regulation Steel Stakes 1 in. x 25 in., pointed. Upper 8 inches of stake enameled red. Regulation pitching rules included.

Send for prices and catalog

Chicago Steel Foundry Co.

Kedzie Ave. and 37th Street Chicago, Ill.

SHOES, Horse and Mule (Continued)

Rowe Calk & Chain Co., Plantsville, Conn.
Standard Horse Shoe Co., 131 State, Boston, Mass.
Tredegar Co., Richmond, Va.
U. S.—See United States Horseshoe Co.
United States Horse Shoe Co., Erie, Pa. "U. S."
Warren Tool & Forge Co., Warren, O
Williams Drop Forging Co., Scranton, Pa. "Cantslip"

SHOES, Horse, Pitching
(See also Quoits)

Betson Mfg. Co., Peoria, Ill.
Chicago, Steel Pdry. Co., Kedzie Av. & 37th, Chicago, Ill.
★For descriptive data of the above, see index on page 6
Lucky Ringer Co., Merchants Sta., St. Louis, Mo.
Martin, W. J., 1541 E. 110th, Cleveland, O.
National Malleable Castings Co., 7706 Platt, Cleveland, O.
National Standard Horseshoe Co., Akron, O.
Ohio Horse Shoe Co., Columbus, O.
Warren Tool & Forge Co., Warren, O.

SHOES, Horse, Rubber

Goodrich (B. F.) Rubber Co., Akron, O
Goodyear Tire & Rubber Co., Akron, O.
Powers Rubber Horseshoe Co., 1700 N. Kostner Av., Chicago, Ill.
Revere Rubber Co., Chelsea, Mass.

SHOES, Hunting

Athletic Shoe Co., 924 N. Marshfield, Chicago, Ill.
Bass (G. H.) & Co., Wilson, Me.
Bean, L. L., Freeport, Me.
Boyden Shoe Mfg. Co., 185 Washington, Newark, N. J.
Buck (E. A.) & Co., Bangor, Me.
Cutter (A. A.) Co., Eau Claire, Wis.
Dayton (J. E.) & Co., Williamsport, Pa.
Elk Skin Moccasin Mfg. Co., Jamestown, N. Y.
Gokey (W. M.) Shoe Co., Jamestown, N. Y.
Hartman (A. W.) Shoe Co., Duluth, Minn.
Hood Rubber Co., Watertown, Mass
L. W. Shoe Co., Chippewa Falls, Wis.
Lunn (John D.) Shoe Co., Monmouth, Me.
Mason Shoe Mfg. Co., Chippewa Falls, Wis.
Mayer (F.) Boot & Shoe Co., 288 E. Water, Milwaukee, Wis.
Mohawk Moccasin Co., Brockton, Mass.
National Footwear Co., Bombay, N. Y.
Norman & Bennett, 144 High, Boston, Mass.
Read (Wm.) & Sons, 364 Washington, Boston, Mass.
Russell (W. C.) Moccasin Co., Berlin, Wis.
Thompson-Smith Shoe Co., 8th & Rosabel Sts., St. Louis, Mo
Wesson, J. E. & W. G., Worcester, Mass.
Wisconsin Shoe Co., 528 Market, Milwaukee, Wis.
Witch-Elk—See Witchell-Sheill Co.
Witchell-Sheill Co., 1510 Brooklyn, Detroit, Mich. "Witch-Elk"
Wrensch & Hermann Shoe Co., 1202 5th, Milwaukee, Wis.

SHOES, Inner Tire

Acme—See Chicago Tire Goods Co.
Acme—See Eno Rubber Co.
Ajax—See Chicago Tire Goods Co.
Ajax Rubber Co., 220 W. 57th, New York, N. Y.
American—See Chicago Tire Goods Co.
American Automobile Accessories Co., 1700 Blue Rock, Cincinnati, O. "Tredkote"
American Tire & Reliner Co., Grand Rapids, Mich.
Arlington—See Voorhees Rubber Mfg. Co.
Atlas Rubber Co., 326 W. Grand Ave., Chicago, Ill.
Atwell Mfg. Co., Independence, Mo
Big J—See Jefferson Rubber Co.
Buckeye Reliner Products Co., Lima, O.
Bull Dog—See Pennsylvania Rubber Co.
Bull Dog—See Eastern Auto Specialty Co.
C-O-T—See Tingley (Chas. O.) & Co.
Chicago Tire Goods Co., 1216 Webster Av., Chicago, Ill. "Acme." "Ajax." "American"
Coffield Tire Protector Co., Dayton, O.
Continental Rubber Wks., Erie, Pa. "Vitalic"
Dural Rubber Corp., Flemington, N. J.
Eastern Auto Specialty Co., Utica, N. Y. "Bull Dog"
Eastern Tire & Rubber Co., 78 W. 2d, Boston, Mass.
Egyptian—See Polson Rubber Co.
Eno Rubber Co., Los Angeles, Cal. "Acme." "Jumbo." "Leech." "Peerless." "Samson"
Exner Mfg. Co., Peoria, Ill. "No-Flo"
Essex Rubber Co., Trenton, N. J
Ever Last Tread Co., Indianapolis, Ind.
Excel Rubber Co., Wadsworth, O. "X. L."
Falls Rubber Co., Cuyahoga Falls, O

GOLDSMITH "PROFESSIONAL MODEL" CATCHERS' MITTS

Used Almost Exclusively by Catchers in Professional Baseball.

Chief Meyers.

Model CM—"Chief Meyers." Designed and used by "Chief Meyers," former famous National League catcher. Moulded, scoop shape, of selected tan waterproofed cowhide. Stitched with extra heavy waxed linen thread. The pad is of special construction, consisting of layers of absorbent felt on a foundation of flexible cowhide. This pad will absorb the pounding of the fastest pitching. The patented (Oct. 24, 1916) Goldsmith Finger Grips and the patented wrist protector prevent turning and slipping. Light in weight and easily handled. Full laced edge with rawhide lacing. Each.....$15.00

Model WC—Bill Killifer. Stop the fast ones with this high grade professional mitt, made of genuine selected cowhide. Thin edge scoop model. Fits the hand snugly and is light in weight. Asbestos felt pad. Full laced edge. Goldsmith patented wrist protector and patent finger grip keeps the mitt from turning and prevents chafing of the wrist. Each $10.00

Showing Construction of Goldsmith Finger Grips (Patented Oct. 24, 1916)

Model WC.

No. 234—A large, well made mitt, perfectly shaped, and of excellent wearing qualities. Choice heavy black cowhide, double stitched and well padded. Full laced edge. Deep, roomy, lace-adjusting, ready-broke pocket. Each...$8.00

No. 234L—Left hand. Each.... 8.00

No. 226—A mitt for hard service. Selected russet cowhide, strong grain leather. Double stitched. Laced edge with rawhide lace for adjusting padding. Patented wrist protector and Goldsmith patent finger grip, keeps the mitt from turning and twisting. A great favorite. Each $6.00

No. 209—An attractive, well built mitt of black horsehide palm and fingers. Double stitched throughout. Well padded to form a natural ball pocket. Full laced edge with waxed lace. Goldsmith patented wrist protector. Each..$4.00

Hoyt.

Nos 226 and 234.

No. 205—Palm and fingers made of good mitten leather, with best grade leatherette back. Double stitched. Well padded with full laced edge. Goldsmith patented wrist protector. Each $3.50

No. 187—An excellent value in good grade chrome tanned leather. Laced edge for adjusting of padding. Goldsmith patent wrist protector. Buckle and strap. Each $2.50

No. 185—Good quality sheepskin palm and fingers, leatherette edge and cloth back. Laced at thumb. Each $1.50

No. 182—Youth's size, strong, black chrome tanned leather palm and fingers, bound edge.....$1.00

No. 181—Same as No 182 with khaki back Each.. 75

Nos. 188, 205 and 209.

FIRST — BECAUSE THEY' — LAST

GOLDSMITH · GUARANTEED ATHLETIC GOODS

CATCHERS' MASKS

No. 275—Spitter. Constructed of aluminum with cold drawn, annealed double steel spring, open vision style. Soft, easy fitting, hair filled leather cushions and chin piece. Elastic web head piece with adjustable buckle and strap. A mask that can be relied upon for full and absolute protection. Each (Patent pending $10.00

No. 271—Spitter. Made with removable sunshade, which protects the eyes from the sun. Open vision. Made of cold drawn annealed steel, dull finished. Electrically welded joints. The soft, hair-padded cushions absorb all shocks. Adjustable strap and buckle for headpiece. Each $5.00

No. 266—Open vision style, of heavy, cold drawn steel, with welded joints. Hair-padded, face-fitting leather cushions. Elastic web headpiece, with adjustable straps. Each.....$3.50

No. 261—Heavy electric welded steel wire, dull finished. Soft, hair-filled cushion. Made to conform to the face. A strong, well-built mask. Each.$2.50

No. 257—A light, yet well constructed, youths' mask. Strong electric welded black steel frame. Laced leather side pads. Will afford positive protection. Each.. . ...$2.00

No. 254—Good, strong, electric welded black enameled wire; well-made leather side and chin pads, adjustable elastic head straps. Each.....$1.50

CATCHERS' LEG GUARDS

No. 6.

No. 6—Moulded fibre leg pieces and moulded sole leather knee cap. Well padded, properly cushioned, close fitting and light in weight. Per pair $8.00

No. 4—Heavy moulded leather knee cap, felt lined. Legpiece made of light but strong reeds, well padded and covered with heavy white canvas. Per pair..$7.00

No. 4.

BODY PROTECTORS

No. 300. Neff. No. 170.

No. 300—Padded. Made of strong khaki, cross-stitched and firmly stuffed. Designed to come well up over the shoulders and to fit the body perfectly. Has adjustable back and shoulder straps. Will absorb the hardest blow. Each $7.00

No. 170—Youth's size. A smaller model made like the No. 300 of strong khaki; cross stitched and stuffed. Elastic adjustable back and shoulder straps. Each.$3.00

BASEBALL SHOES

The uppers are the finest kangaroo leather, with best white oak soles. Bench made. Sprint last, with flexible shank. Steel plate protector in soles, with annealed steel spikes.

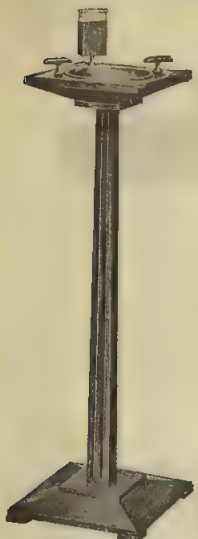
No. 74—Per pair $6.50

Best grade selected chrome tanned calfskin, with good grade oak soles. Steel plate protector in soles. Blued steel spikes. A serviceable and hard-wearing shoe.

No. 70—Per pair . ..$4.50

The Highest Quality Smoking Stands and Cabinets Made in America

ALL FITTINGS SPECIFIED ARE HIGHEST QUALITY SILVER PLATED. EXCISE TAX INCLUDED IN OUR PRICES. WORKMANSHIP AND FINISH THE VERY BEST.



MAHOGANY SMOKER STAND
Height 28 inches. Diameter of Glass Ash Tray 5 inches. Silver plated fittings.
No. 3A306 ... $16.50

MAHOGANY SMOKER STAND
Height 25 inches. Removable Metal Ash Tray with 5-inch Glass Lining. Silver plated fittings.
No. 3A312 Each ... $22.98

MAHOGANY SMOKER STAND
Height 28 inches. Diameter of Glass Ash Tray, 5 inches. Silver plated fittings.
No. 3A313 Each ... $30.90

MAHOGANY SMOKER STAND
Height 28 inches. Diameter of Ash Tray, 6 inches. Silver plated fittings.
No. 3A329 Each ... $22.50

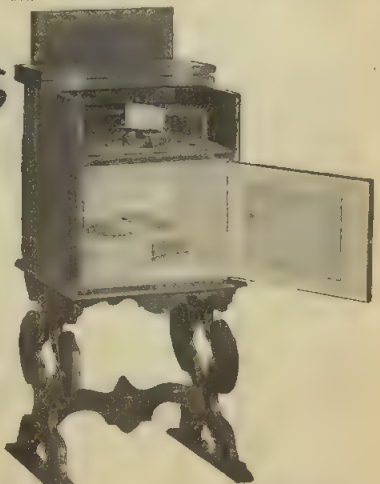
MAHOGANY SMOKER STAND
Height, 30 inches. Diameter of Glass Ash Tray, 5 inches. Silver plated fittings.
No. 3A314 Each ... $32.45

TUDOR PERIOD SMOKING CABINET

Truly a De Luxe Smoking Cabinet for the Gent which is positively the best made and obtainable. Choice of genuine brown mahogany dull or red mahogany dull or select American walnut dull. Metal lined Humidor with moistener and 3 wax match safe, cigar holders and ash tray. Height 29¼ inches top 14x12 inches. Weight 65 lbs. Solidly constructed and elegantly finished.

No. 3R315BM	Brown Mahogany, dull each	$52.50
No. 3R315RM	Red Mahogany dull, each	$52.50
No. 3R315AW	American Walnut dull, each	$52.50

MAHOGANY SMOKER STAND
Height 28 inches. Diameter of Glass Ash Tray, 5 inches. Silver plated fittings.
No. 3A305 ... $15.45



WILLIAM AND MARY PERIOD SMOKING CABINET

Positively the highest quality in a Smoking Cabinet on the market. Solidly constructed and elegantly finished. Choice of genuine brown mahogany dull, red mahogany, dull or select American walnut dull. Metal lined humidor with moistener and 3 combination match safe, cigar holders and ash tray. Height 29¼ inches top 14x12 inches. Weight 65 lbs.

No. 3R392BM	Brown Mahogany ... each	$58.10
No. 3R392RM	Red Mahogany ... each	58.10
No. 3R392AW	American Walnut dull each	58.10

Highest Grade American Make Saxophones

A line of American made Saxophones of the very highest quality and provided with the latest improvements in mechanism and fingering. These instruments are of the real quality and are guaranteed to be the peer of any on the market.

They are American made throughout. They are built on improved models and proportions, giving great beauty of tone and faultless intonation. We particularly call attention to the Eb Alto and C Tenor, which have a new and improved system of fingering, whereby the F to C# and C to D are fingered by the 2nd finger of right hand, instead of sliding the same finger from C to Eb, as on all other makes. Also the Bb Tenor has the same improved fingering. All Saxophones have the Automatic Octave Key, the Bb Clarinet Throat Tone Key, and the Left Hand Low C# Key. The Bb Soprano has the Automatic Octave Key, the Bb Clarinet Throat Tone Key, and the Left Hand Low C# Key. The Bb Soprano has the Automatic Octave Key, the Bb Clarinet Throat Tone Key, and the Left Hand Low C# Key. The Bb Soprano has the Automatic Octave Key, the Bb Clarinet Throat Tone Key, and the Left Hand Low C# Key.

Description of Finishes

Gold lacquer finish, gold plated keys, highly polished.
Silver plated satin finish bell and bow, gold plated keys, highly polished.
Silver plated satin finish bell and bow, gold plated keys, hand burnished.
Heavy gold plated and hand burnished.

C TENOR OR MELODY SAXOPHONE

No. 9172A	Each	$170.85
No. 9172B	Each	222.95
No. 9172C	Each	231.30
No. 9172D	Each	253.50
No. 9172E	Each	314.50
No. 9172F	Each	369.10

Bb TENOR SAXOPHONE

No. 972A	Each	$171.25
No. 972B	Each	224.25
No. 972C	Each	236.25
No. 972D	Each	256.60
No. 972E	Each	330.35
No. 972F	Each	392.75

Bb SOPRANO SAXOPHONE

No. 970A	Each	$152.10
No. 970B	Each	183.30
No. 970C	Each	192.55
No. 970D	Each	208.95
No. 970E	Each	249.60
No. 970F	Each	280.80

Eb ALTO SAXOPHONE

No. 971A	Each	$156.50
No. 971B	Each	203.60
No. 971C	Each	214.25
No. 971D	Each	231.00
No. 971E	Each	285.60
No. 971F	Each	332.45

No. 9172

This instrument is especially designed for band, orchestra and recital work. Plays from part written in concert or key, without transposition. All Saxophones on this page are in International or Low Pitch. High Pitch furnished to special order only.

Eb BARITONE SAXOPHONE

No. 973A	Each	$225.20
No. 973B	Each	293.15
No. 973C	Each	309.70
No. 973D	Each	339.00
No. 973E	Each	417.95
No. 973F	Each	511.70

Bb BASS SAXOPHONE

No. 974A	Each	$280.80
No. 974B	Each	423.00
No. 974C	Each	452.15
No. 974D	Each	543.80
No. 974E	Each	686.00
No. 974F	Each	780.50

C SOPRANO SAXOPHONE Straight Model

No. 9170A	Each	$152.10
No. 9170B	Each	183.30
No. 9170C	Each	192.55
No. 9170D	Each	208.95
No. 9170E	Each	249.60
No. 9170F	Each	280.80

SPECIAL SAXOPHONE CASES

This is a case that will instantly appeal to every Saxophonist. A case of such superb quality at such a low figure has never before been offered. Imagine getting a genuine Keratol covered, Saxon Plush lined case, Keratol reinforced internally at this price. An additional patented feature is the end device, which allows the instrument to slip in place in such a manner that damage to the Octave Key is impossible. Nickel plated Nameplate on front.

No. 922 For C Melody Wood body covered with fine Walrus grain Keratol, with full length nickel plated exposed metal parts, Keratol reinforced internally at ends, with full length nickel plated hinges. Patented end device. Two compartments for accessories, each $21.00

No. 922½ Same as 922 for Bb Tenor, each 26.20

No. 921 Same as 922 for Eb Alto each 19.10

No. 920½ Same as 922 for straight "C" Soprano, each 13.45

No. 920¾ Same as 922 for Bb straight Soprano, each 13.45

No. 920 Same as 922 for Bb curved Soprano, each 14.70

SILK PLUSH LINED SAXOPHONE CASES

No. 980 For curved model Bb Soprano Saxophone, wood body covered with Keratol and lined with a fine quality of plush. Nickel plated look and trimmings, each $19.60

No. 980½ For C Soprano, straight model. Otherwise same as No. 980, each 17.80

No. 980¾ For Bb Soprano, straight model. Otherwise same as No. 980, each 17.80

No. 981 For Eb Alto, otherwise same as No. 980 each 30.80

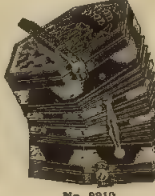
Note.—If Saxophone Case is purchased separately, a charge at actual cost for boxing will be made.

Concertinas

Hexagon Form

No. 9902

No. 9872



No. 9910

SINGLE SET REEDS

No. 9870 20 keys, brass tone corners, nickeled ends, leather bellows, each ..... $ 9 80

DOUBLE SET REEDS

No. 9902 20 keys, German silver reeds, nickeled ends, special reed, each 9 60

No. 9872 20 keys, polished tops, bound with gilt ornamentations, nickel corners and clasps, double bellows, each 10.80

No. 9874 20 keys, nickel tops, corners and clasps, heavy bellows frames with nickel protectors, each 10.96

No. 9906 20 silver reeds, Fine nickel ends, Aspin pattern, nickel corners, heavy nickel bellows frames, each holds a pair of reeds, each 12.20

No. 9910 20 silver reeds, Aspin pattern, nickel ends, Angle pattern, nickel corners with variegated wood inlay around edges, adjustable leather straps, each 12 80

No. 9910½ Same as No. 9910 except has triple bellows, nickel corners and clasps, each 13.70

Majestic Concertinas

Square Form

No. 976

The Majestic Brand Concertinas, presents a harmonious, complete, the highest standard of the Concertina makers' art. Every detail in the construction has been most carefully worked out, and no trouble or expense has been spared to give the greatest possible value. THE FINISH represents the efforts of the most skilled workmen, and is such as is found only on the highest grade goods.

THE REEDS are made of the best material carefully tuned, and form one of the most valued features of the instrument.

THE TONE is sweet and powerful, which adds much to the selling qualities of the instrument, and makes it a continued source of pleasure to the owner.

No. 976 Rosewood veneered case with Liberty silver ornamentation, double leather covered bellows with Liberty silver corners and bellows protectors, 3 rows of pearl keys on each side, 76 notes, 38 keys, 152 steel reeds, tuned in octaves or double unison, size 8x7¾ inches, each ..... $ 93.40

No. 976½ Ebonized case with handsome lyre design scroll on right side, pearl veneer inlaid on ends, edged with Liberty silver line, corners with pearl veneer and Liberty silver corners, 76 notes, 38 keys, 152 steel reeds, tuned in octaves or double unison, size 8x7¾ inches 10.20

No. 976¾ Ebonized case with handsome lyre design scroll on right side, cut corners with Liberty silver lyre design inlay, double reinforced bellows Liberty silver corners, 76 notes, 38 white pearl top buttons, 152 genuine steel reeds, size 8x7¾ inches, each 106.40

No. 980 Rosewood veneered case, handsome scroll panel with vine design on right side, Liberty silver lines and medallions, cut off corners and ends with silver nickel design trim, 3 rows white pearl keys, corner protectors, 102 notes, 51 pearl keys, 2 octave transpose, 4 octaves high, 204 steel reeds set 2 and 2 inches each 182.50

Orchestra and Bass Drums of Quality

PROBABLY NOT THE LOWEST IN PRICE, BUT POSITIVELY THE BEST QUALITY AT THE PRICES. EXPERTLY CONSTRUCTED AND SUPERBLY FINISHED. SERVICEABLE AND ESPECIALLY PRICED

Bass Drum

No. 91000

"A drum that will encourage a boy to do his best." This drum, because of its light weight, is easily earned; many orchestra and job players prefer it because the combination, weight and tone, appeals to them. Size 8x24 inches, substantially built. Maple shell, maple counter hoops, 8 nickel professional thumb-screw rods, improved type. Equipped with two durable drum heads.

No. 91000 Each. **$39.50**

DRUMS MAKE PLEASING BIRTHDAY OR HOLIDAY GIFTS

Bass Drum

"A mighty popular drum with the Profession"

Sturdily constructed and elegantly finished. Very serviceable and especially priced in this selling.

Choice of two sizes:

Size 8x24 inches, maple or mahogany veneer shell, strongly reinforced. Fine quality heads, improved nickel plated thumb-screw rods. Designed especially for the jobbing dance drummer.

No. 92000 Each. **$43.40**

Size 10x24 inches, otherwise same description as above.

No. 93000 Each **$44.70**

No. 92000

Orchestra Drums

"A LINE WE ARE PROUD OF"

Any one of the following models, for Dance, Vaudeville or Orchestra work, will prove a source of joy to you

No. 9410

A fine pair of Hickory Sticks included with each Drum

No. 9300D Size 14x3 inches, maple shell, 8 thumb rods, 8 water proof snares, 2 calf heads, each **$30.00**

No. 9302D Size 14x4 inches, otherwise same as 9300, each **30.00**

No. 9304D Size 14x5 inches, maple shell, 8 thumb rods, 8 waterproof snares, 2 calf heads, each **30.00**

No. 9301D Size 15x3 inches, maple shell, 8 thumb rods, 8 waterproof snares, 2 calf heads, each **30.00**

No. 9303D Size 15x4 inches, maple shell, 8 thumb rods, 8 waterproof snares, 2 calf heads, each **30.00**

No. 9305D Size 15x5 inches, maple shell, 8 thumb rods, 8 waterproof snares, 2 calf heads, each **30.00**

No. 9400 Size 14x3 inches, solid maple shell, maple hoops, natural color, 10 N. P. thumb rods, 12 waterproof snares, 2 calfskin heads, each **31.50**

No. 9410 Size 14x3 inches, solid maple shell, maple hoops, natural color, 14 thumb rods, N. P. hand polished, 12 waterproof snares, 2 calf heads, each. **34.45**

No. 9411 Walnut shell, otherwise same as 9410, each **34.45**

Note:—Above drums can be furnished in mahogany also.

Metal Shell Drums

SEPARATE TENSION

No. 9601

A fine pair of Hickory Sticks included with each Drum

Perfect vibration is absolutely necessary to good drum tone. Some force is necessarily lost in transmission from head to head—therefore the batter head should be given more tension than the snare in order to transmit the stroke in full, yet returning enough force to properly rebound the sticks. It is quite apparent that proper tension cannot be maintained if both heads are on the same tension rod. Separate tension drum-heads are adjusted independent of each other, thus assuring at all times correct tension on both heads.

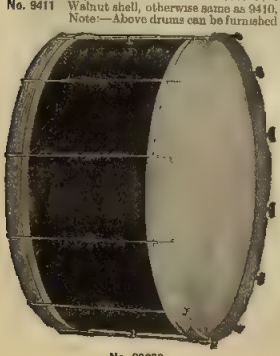
No. 9600 Size 14x4 inches. The Dance Model. Corrugated brass shell, heavily nickel plated, two-post center tightening support. 6 pair separate tightening screws, patented combination snare strainer and muffler, and combination silk and wire snares, each **$36.40**

No. 9601 Size 14x5 inches. All-around Model, otherwise same description as 9600, each **36.40**

No. 9602 Size 14x6½ inches. The Band Model, otherwise same as 9600, each **36.40**

No. 9603 Size 15x4 inches. Dance Model, otherwise same as 9600, each **36.40**

No. 9604 Size 15x5 inches. The Theatre Model, otherwise same as 9600, each **36.40**



No. 96028

Bass Drums

THIS BASS DRUM IN ANY SIZE IS THE ACME OF PERFECTION

"Built to a standard that very few are capable of maintaining; excelled by none"

Used by leading artists and organizations the world over

All sizes equipped with L. & H. thumb rods; hoop and flesh hoops perfectly fitted. All rods braced in center—maple hoops natural finish.

Birds-Eye Maple Shell	Mahogany Shell	(Choice of Bird's Eye Maple or Mahogany Shell,	
No. 96024	**96124**	Shell size 24x12, 10 rods, with calfskin heads, each	**$47.50**
No. 96026	**96126**	Shell size 26x12, 10 rods, with calfskin heads, each	**51.20**
No. 96028	**96128**	Shell size 28x14, 12 rods, with calfskin heads, each	**57.25**
No. 96030	**96130**	Shell size 30x14, 12 rods, with calfskin heads, each	**61.60**
No. 96032	**96132**	Shell size 32x14, 12 rods, with calfskin heads, each	**66.30**
No. 96034	**96134**	Shell size 34x16, 14 rods, with calfskin heads, each	**75.40**
No. 96036	**96136**	Shell size 36x16, 14 rods, with calfskin heads, each	**81.20**

HEISLER LOCOMOTIVE WORKS

ERIE, PENNSYLVANIA

Western Representatives
WHITNEY ENGINEERING COMPANY, TACOMA, WASH.

Heisler Geared Locomotives

Product

Heisler Geared Steam Driven Locomotives for economical operation over rough and temporary track, light rails, sharp curves, steep grades and for rapid switching service. For any gage of track.

On a 3% grade a 36-ton Heisler will haul twice as much as a rod engine and tender weighing 35 tons in working order.

Heislers will switch and spot cars much more rapidly than any other locomotive. They will accelerate a load to 15 miles per hour 25% more quickly than a rod engine of equal tractive power.

Due to distribution of Heisler weight initial rail cost is often reduced 50%. Fewer ties are required. Cost of bridges, trestles and grading is very much less than for a direct connected locomotive which requires good track and wide curves, necessitating excessive filling and excavating. Heislers reduce track maintenance to a minimum.

Balanced and sturdy construction, accessibility and high grade materials insure continuous and trouble-free service at a minimum cost for operation and maintenance.

Illustrated Catalog showing Heislers in service and descriptive literature gladly furnished upon request.

Eight Driver, I Beam Frame Construction
Classes 24-8-30 to 42-8-33 Inclusive

Eight Driver, Diamond Frame Construction
Classes 50-8-36 to 65-8-40 Inclusive

Twelve Driver, Diamond Frame Construction
Classes 70-12-36 to 90-12-40 Inclusive

CLASS NUMBERS AND CAPACITIES. Class Represents Weight in Average Working Order, Number of Drivers and Size of Drivers

Class	24-8-30	28-8-30	32-8-30	36-8-33	42-8-33	50-8-36	55-8-38	65-8-40	70-12-36	80-12-38	90-12-40
Code Word for Size of Locomotive	Argil	Arian	Arithmetic	Armil	Aroma	Arsenal	Artful	Ascend	Astrille	Ashen	Aside
Weight in Full Working Order—Lbs	52000	61000	70000	70000	92000	112000	121000	143000	160000	177000	189000
Rigid Wheel Base	44"	44"	44"	50"	56"	56"	62"	66"	56"	62"	66"
Total Wheel Base	18'-2"	21'-0"	21'-4"	23'-6"	25'-0"	25'-11"	27'-1"	30'-0"	38'-8"	40' 3"	44'-10"
Total Length Over All	26'-4"	29'-10"	30'-4"	32'-0"	33'-5"	34'-3"	36'-6"	39'-0"	47'-0"	48'-1½"	53'-10"
Sharpest Practicable Curve—Radius	50'	50'	50'	70'	80'	80'	85'	100'	100'	100'	100'
Sharpest Advisable Curve Radius	80'	80'	60'	80'	90'	90'	95'	125'	125'	125'	125'
Advisable Weight of Rail—Lbs. per Yd	25	30	30	35	40	45	50	60	50	50	60
Minimum Weight of Rail—Lbs. per Yd	20	25	25	30	35	40	45	55	45	45	55
Tractive Force—Lbs	11290	13100	15330	17120	19530	23200	24160	29450	31940	342 0	18880
Hauling Capacities in Tons, of 2000 Pounds, Exclusive of Locomotive, Based Upon 8 Pounds Per Train Ton Rolling Friction and 75% of Boiler Working Pressure											
On Absolutely Level Straight Track	1387	1589	1871	2102	2 39	2735	3005	6	397	417	4770
On 1% Grade 52.8 Ft. per Mile	379	439	511	573	655	749	817	986	1070	1142	1298
On 2% Grade 105.6 Ft. per Mile	211	247	285	320	365	412	448	548	595	632	720
On 3% Grade 158.4 Ft. per Mile	142	164	192	219	245	276	60	368	399	423	481
On 4% Grade 211.2 Ft. per Mile	104	120	141	158	179	202	219	269	292	308	351
On 5% Grade 264.0 Ft. per Mile	80	93	109	123	138	155	168	207	225	238	270
On 6% Grade 316.8 Ft. per Mile	64	74	86	97	110	123	135	165	179	187	213
On 7% Grade 369.6 Ft. per Mile	52	60	70	79	88	100	108	134	145	151	172
On 8% Grade 422.4 Ft per Mile	43	50	58	65	68	82	88	110	120	123	141
On 9% Grade 475 Ft per Mile	36	41	49	55	61	68	73	91	99	103	116
On 10% Grade 5 8 Ft. per Mile	30	35	41	46	51	56	61	76	82	85	96

The hauling capacity of locomotives is based upon tractive force, rolling friction, grade resistance and curve resistance. Under conditions of rough and uneven track the ability of a locomotive to utilize its tractive force has a very great bearing upon hauling capacity. The flexible construction of the HEISLER Locomotive insures maximum hauling capacity.

Rolling friction varies considerably with the condition of track weight per axle, lubrication and kind of cars used. For average conditions 8 to 10 pounds per train ton may be figured. With heavy, well lubricated cars and extra good track 6½ lbs. may be figured. With poor track and cars it is often 20 lbs. or more, and for mine cars in bad condition, may run as high as 80 lbs. Grade resistance is exactly 20 lbs. per train ton for each per cent of grade, while curve resistance may be figured at 0.8 lbs per train ton for each degree of curvature.

The following example shows how to find the size locomotive needed for certain conditions. What size locomotive should be used to haul 900 tons over a 3 per cent grade and 5 degree curve figuring rolling friction as 8 lbs. per train ton?

It will be seen that the resistance to be overcome is 2 x 20 + 0 6 x 25, + 8 or 63 pounds per train ton. Multiplying 250 by 63 . . 18 270 the total train resistance.

Now suppose a Class 50 8 36 HEISLER weighing 50 tons in average working order for this work. Multiplying 50 by 63 . . 3 150 total engine resistance

Adding 18,270, the train resistance and, 3,150, the locomotive resistance, we have a total resistance of 21,420 pounds to be overcome. The tractive force of the locomotive is 22,200 lbs.; it will therefore handle the load under the above conditions.

H. K. PORTER COMPANY

Offices: Union Bank Building
PITTSBURGH, PENNA.

Builders of

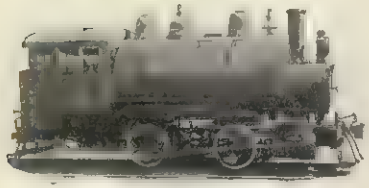
Steam Locomotives
Compressed Air Locomotives—Fireless Steam Locomotives

Since 1865 this company has specialized on steam locomotives for mine and industrial use.

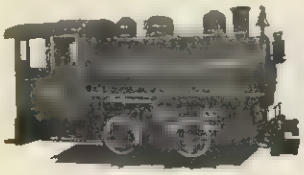
On this page we illustrate eight types used extensively for mine, yard and stripping work.

We have prepared and have now ready for distribution our complete bulletin No. 102 on Locomotives for Coal Mine Use.

50 tons, 16x24 cylinders used by Cadiz Block Coal Co.



This 41½-ton Locomotive is Used Extensively for Yard and Stripping Work—Strong, Sturdy and Always Reliable.

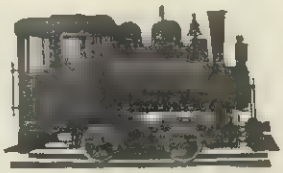


10x16 Cylinders, 18-ton Locomotive Built for Beluan Coal Co., Smithfield, O.

12x18 Cylinders—26½ Ton, Ben Franklin Coal Co.

10x14 Cylinders—16 Ton

9x14 Cylinders—14½ Ton.



7x12 Cylinders—9 Tons used at Pinson Fork, Ohio.

The Above Illustrates a Type of Engine We Build For Many Mines Where Clearances Are Limited. The Simplicity of Porter Construction Lends Itself Readily to This Type of Engine.

Immediate shipment of locomotives described above can usually be made from stock.

THE BALDWIN LOCOMOTIVE WORKS

PHILADELPHIA, PA.

OFFICES

New York, N. Y.—120 Broadway
Chicago, Ill.—627 Railway Exchange
St. Louis, Mo.—1210 Boatmen's Bank Building
Richmond, Va.—512 Richmond Trust Building
Boston, Mass.—185 Devonshire Street
Pittsburgh, Pa.—375 Union Trust Building
Houston, Texas—1108 Second National Bank Bldg.
St. Paul, Minn.—908 Merchants National Bank Bldg.
Portland, Ore.—313 Northwestern Bank Bldg.
San Francisco, Cal.—310 Sansome Street
Los Angeles, Cal.—702 Pacific Electric Building
Mexico, D. F.—2a Capuchinas 48

LOCOMOTIVES

Product

Steam Locomotives.

While steam locomotives have been largely replaced in underground haulage by other and more suitable types of motive power, they are extensively used in surface work about mines and smelters, and also in open-pit mining service.

The fact that the steam locomotive is dependent upon no external source of power; that it is reliable and easily maintained, and that its operation is so well understood, fits it for almost any class of mining or industrial service where the emission of smoke and gas is not objectionable.

With over ninety years' experience in locomotive building and a total production of about 58,000 locomotives, we are in a peculiarly favorable position to study motive power requirements of mines and industrial plants, and to recommend types best fitted for meeting any specified conditions of service.

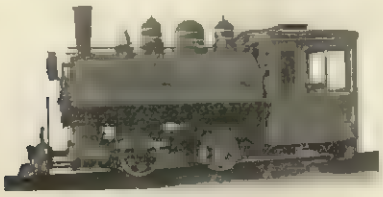


Fig. 1
Cylinders, 10" x 16"
Driving-wheels, diameter, 29"
Weight, total engine, 37,000 lb
Tractive force, 7,740 lb.

For light switching and short haul work, the most suitable type of locomotive is usually one having two pairs of coupled drivers carrying the entire weight, including that of fuel and water supply. Such a locomotive, designed for a track gauge of 3 feet, and for service where clearance limits are fairly liberal, is shown in Figure 1.

Locomotives of this general type can be built for any gauge of track. They can also be designed for restricted clearance limits by placing the cylinders between the frames, and driving on a crank axle if it is necessary to greatly reduce the overall width. The locomotive illustrated is strongly built throughout, especially as to the running gear and machinery, and is suitable for service on rough tracks and sharp curves where derailments are liable to occur.

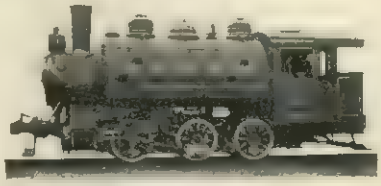


Fig. 2.
Cylinders, 18" x 24"
Driving-wheels diameter, 44"
Weight, total engine, 121,130 lb.
Tractive force, 27,860 lb.

Figure 2 shows a standard gauge tank locomotive with three pairs of driving wheels, suitable for general switching and short haulage about mines, quarries and industrial plants where trunk line rolling stock must be handled.

Fig. 3
Cylinders, 22" x 26"
Driving wheels, diameter, 51"
Weight, total engine, 152,860 lb
Tractive force, 35,500 lb.

For heavier work requiring larger fuel and water supply capacities, locomotives of this type are built with separate tenders as shown in Figure 3. This locomotive is equipped with piston valves, outside valve gear of the Walschaerts type, and power reverse mechanism.

Fig. 4
Cylinders, 25" x 28"
Driving-wheels, diameter, 50"
Weight, total engine, 223,330 lb.
Tractive force, 53,600 lb.

For the heaviest class of switching and open pit mining service, the eight-coupled type, shown by Figure 4, is recommended. This locomotive uses superheated steam and is equipped throughout in accordance with the most modern practice for heavy switching locomotives.

We have complete facilities for manufacturing and delivering duplicate and spare parts for locomotive maintenance. Work of this kind is given special preference to insure prompt shipment. We are also fully equipped to repair and modernize locomotives in our own shops.

DAVENPORT LOCOMOTIVE WORKS

DAVENPORT, IOWA

OFFICES

New York, N. Y.....30 Church St.
Chicago, Ill.....12 So. Canal St.
Seattle, Wash.....1018 Fourth Ave., So.
San Francisco, Cal...741 Monadnock Bldg.
Los Angeles, Cal...326 San Fernando Bldg.
Pittsburgh, Pa.....Union Arcade

Rod and Gear Drive Steam Locomotives
Gasoline Locomotives

Rod Locomotives

We build a complete line of locomotives for service at industrial plants, quarries, sand and gravel pits, brick plants, mines, construction work, etc. Our 25 years in building steam locomotives enables us to furnish just the locomotive for your particular service. We have facilities for furnishing spare and repair parts for our locomotives immediately.

Furnished in weights ranging from 7½ to 50 tons. Built for any practical gauge. Equipt to burn coal, oil or wood as desired. Couplers, smoke stack and other details changed to meet requirements.

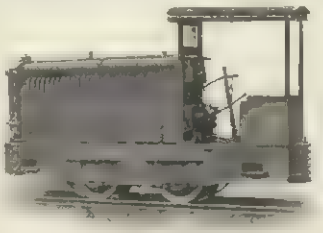
Furnished in weights ranging from 16 tons to 60 tons exclusive of tenders. The small or narrow gauge locomotives are built 30" gauge and wide. The larger sizes are usually furnished on standard gauge. Equipt to burn coal, oil or wood. Furnished with either steam or air brakes.

We issue a complete catalogue covering our Rod Locomotives that will be furnished on request.

Gasoline Locomotives

Davenport Gasoline Locomotives are built in 7 ton, 10 ton, 15 ton and 20 ton sizes. They have many improvements over the old standard design, such as:

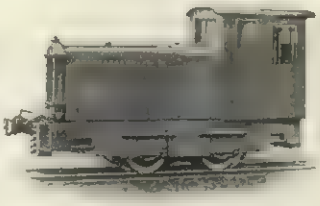
All working parts inclosed and perfectly lubricated. No chains, gears or bearings exposed to dust and grit. Roller chains used in transmission instead of gears. Each wheel has individual axle. Brakes are perfectly equalized.



The above illustration shows our 7-ton gasoline locomotive, having canopy cab, with windshield at front and curtains at sides and rear. Built 24" gauge and wider furnished with or without starting and lighting system.

STAYS ON THE TRACK

Complete descriptive catalogue on request.



The above illustration shows our 10-ton Gasoline Locomotive having full enclosed cab with a door on each side and windows at front and rear, giving the operator clear vision. Built 24" gauge and wider. Furnished with or without starting and lighting system

Gear Drive Steam Locomotives

Davenport Gear Drive Locomotives eliminate all the objectional features of other geared locomotives. They have no bevel gears. We use steel spur gears, made extra heavy, having cut teeth. The gears are inclosed in a dust proof housing and operate in oil continually, thus reducing wear to a minimum.

Our Four Coupled Gear Drive Locomotives range in weight from 7 tons to 47 tons. Built for any practical gauge. Equipt to burn coal, oil or wood. Furnished with either side or saddle tanks. Either steam, hand or air brakes as required.

We recommend these gear drive locomotives for service on steep grades or where it is desired to handle heavy tonnage on level track.

We have a complete catalogue covering our gear drive locomotive that will be sent on request.

This gear drive locomotive was built for logging service in Michigan, equipt with straight and automatic air brakes, automatic couplers, saddle tank and rear coal bunker. Six-wheel type with four-wheeled trailing truck.

LOBDELL CAR WHEEL COMPANY

ESTABLISHED 1836

WILMINGTON, DEL.

Steel and Iron Founders and Machinists

Products

Car wheels of every description. Complete trucks, especially designed for mine service; either plain, self-oiling, or roller bearing. Locomotive wheels, axles and tires. Refitting and repairing a specialty. Iron and steel castings. Chilled iron pump plungers for boiler feed, and mine pumps.

Experience

For over 85 years this company has concentrated on the manufacture of car wheels and allied articles of chilled iron and steel, and has to-day the largest and best equipped plant for this class of work in the country. Size and age, however, mean nothing except that they are reflected in the quality of the product produced, and we feel justified in stating that there are no better wheels than LOBDELL. This company does not build car bodies, being specialists in the manufacture of car wheels, complete trucks, chilled iron and steel castings only.

Mining Locomotive Wheels

LOBDELL Chilled Iron Wheels for medium loads; Steel Tired or Special H. C. Chrome Alloy Cast Steel wheels for heavy loads, are unsurpassed in wear, strength and tractive power.

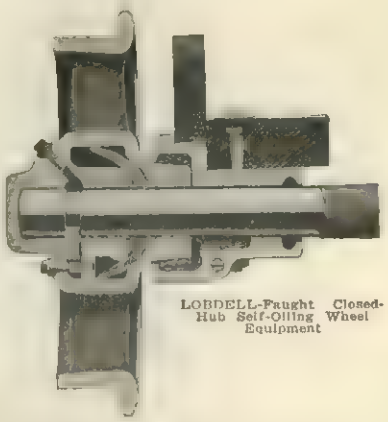
Our company is thoroughly equipped with patterns in all the above types to make wheels for any make of mining locomotive, and makes a specialty of fitting such wheels on either old or new axles.

Mine Car Wheels

The ever increasing loads and severity of service due to motor haulage, long hauls, high speeds, etc., make it necessary that the iron used in the production of car wheels for mine service be most carefully selected for both strength and chill. Our long experience has enabled us to make wheels unexcelled in their strength and noted for their long wearing characteristics. Our especially constructed annealing furnaces make the arms and hubs tough and strong without affecting the hardness of the chill. We are fully equipped to make wheels of any description, either furnishing the wheels, axles and pedestals complete or the wheels only, suitable for use with axles already installed. Long experience however, permits the recommendation of

The Faught Closed Hub Self-Oiling Wheel

This is the most satisfactory wheel of this type made. It is easily and securely fastened on the axle. It has a solid closed hub—no gaskets or leaky wheels. The lubrication is the best to be obtained in this type of wheel—the oil cavity holds enough oil to last several months. The extra long wheel bearing, evenly balanced, insures against worn hubs. The quality of the workmanship and material is the usual LOBDELL standard.



LOBDELL-Faught Closed-Hub Self-Oiling Wheel Equipment

We can also recommend for cars where long hauls against the grade are encountered or where cars are moved considerably by hand the following types equipped with anti-friction bearings:

LOBDELL-Hyatt Self-Aligning Box application for heavy cars where weight of car and load is five tons or more.

LOBDELL-Hyatt Roller Bearing wheel application for lighter cars and loads.

LOBDELL-Timken Roller Bearing wheel application for all capacities.

Where the construction of the car will permit, the self-aligning box application is recommended for all loads. This design, in which the roller bearings are mounted in self-aligning boxes carried in pedestals attached to the car body, insures the rollers being relieved of all thrust loads, permits more perfect lubrication and gives longer life and easier running. Where the bearings have to be mounted in the wheel hubs due to restrictions of car design the Timken Adjustable Bearing is recommended as it is designed to take the thrust loads encountered in the wheel hub application and is adjustable for wear.

All roller bearing equipments eliminate wheel hub wear and permit the unusually hard, long wearing treads of LOBDELL wheels to give their maximum service. Wheels discarded for worn hubs are entirely eliminated.

OGDEN IRON WORKS COMPANY

Main Office: Odgen, Utah Works: Ogden, Utah

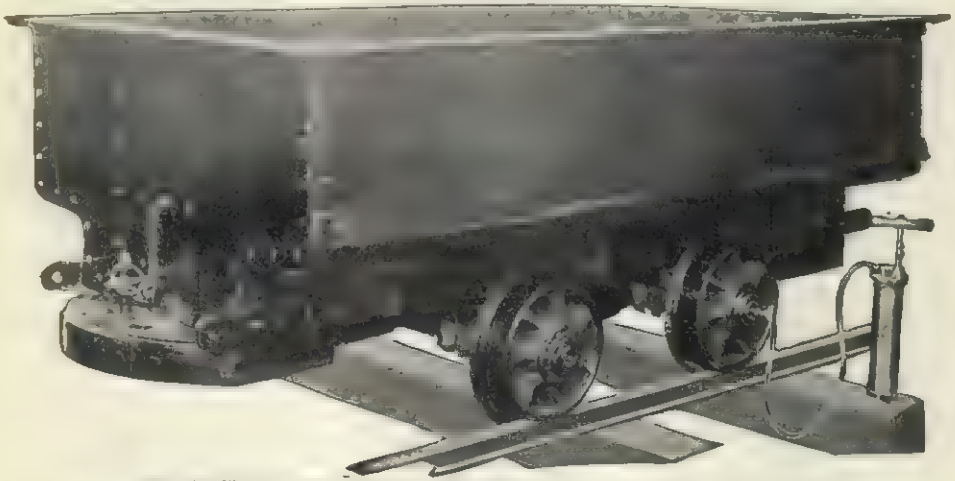
Mine Car Manufacturers

All Steel Cars

Reduce maintenance and repair charges.

Illustration shows a car on which all wheels are lubricated by Alemite system and fitted with Alemite fittings. Inside dimensions are as follows: Body length, 100 inches; Body width, 58 inches; Body depth, 30 inches. Diameter of Wheels, 16 inches; diameter of axles, 3 inches.

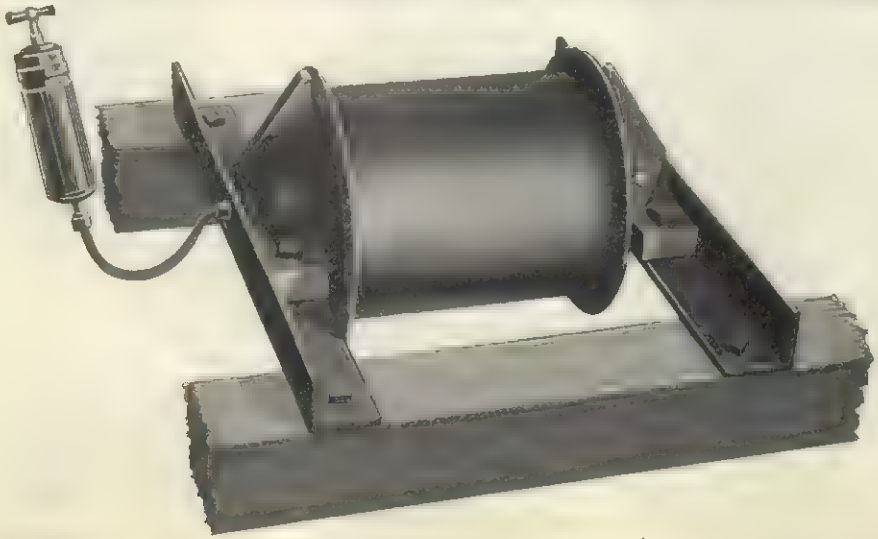
We make all sizes. Get our prices.



Silver Car Wheels. Heavy Duty Self Aligning Bearings. Steel Balls for Retaining Thrust
United States Patent Apr 1 1924—Also Patents in Foreign Countries

Tramway Rope Rollers

They are equipped with HYATT ROLLER BEARINGS. Bearing Caps are packed to keep out all dirt and to retain lubricant. Hub Caps are designed with Rope Guides. Roller Surface is Chilled giving same wearing qualities as Chilled Car Wheels. Write for prices and other information.



AMERICAN LOCOMOTIVE COMPANY

30 Church Street, NEW YORK

Cable Address: Locomotive, New York

BRANCH OFFICES

McCormick Building, Chicago, Ill. Praetorian Building, Dallas, Tex.
Syndicate Trust Building, St. Louis, Mo. Rialto Building, San Francisco, Cal.
Second National Bank Bldg., Houston, Texas
Richmond, Virginia

WORKS

Schenectady Works, Schenectady, N. Y. Richmond Works, Richmond, Va.
Brooks Works, Dunkirk, N. Y. Cooke Works, Paterson, N. J.
Montreal Works, Montreal, Canada

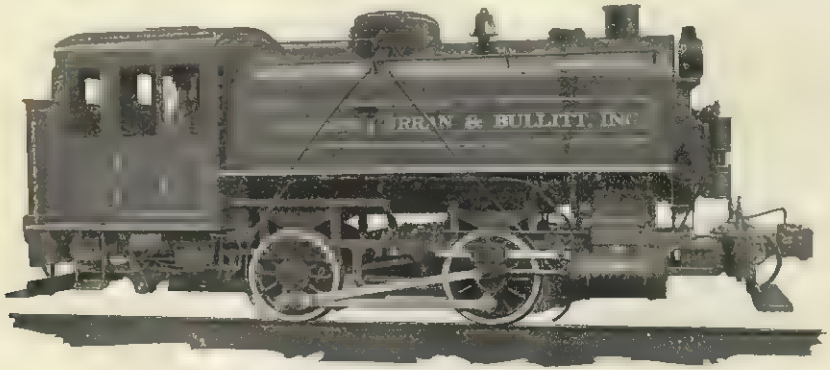
Standard Stock Locomotives

Locomotives For All Purposes

These efficient, well designed, and well built units, are carried in stock at our Cooke Works, Paterson, N. J.

All the wearing parts are made to templates and gauges, and are absolutely interchangeable on the same size of engines. This method of construction allows us to keep these parts in stock and assures immediate shipment of parts that are sure to fit.

Many hundreds of these locomotives are now in operation around industrial plants, mines, and in contractor's service. Repeat orders testify as to the satisfaction given.



Four-Wheel Tank Locomotive—For Contractors, Quarry, Mine and Industrial Service.

FOUR-WHEEL TANK LOCOMOTIVES—0-4-0-T TYPE

Code Word	Gauge of Track Feet and Inches	Diam and Stroke of Cylinder Inches	Diam of Driving Wheels Inches	Wheel Base Feet and Inches	Capacity of Water Tank Gals.	Capacity of Coal Bunker Lbs.	Weight in Working Order Lbs.	Boiler Pressure Lbs.	Tractive Power Lbs.	Weight of Lightest Rail Advised Per Yard	Radius of Sharpest Curve Advised Feet	Hauling Capacity in Tons of 2000 Pounds (Exclusive of Locomotive) On Level	On Grades of ½ %	1 %	1½ %	2%	3%
Ubaeb	3-0	9x14	27	4-6	600	475	29 000	175	6,250	30	35	590	350	210	150	115	75
Ubalt	4-8½	9x14	27	4 6	600	475	30 000	175	6,250	30	35	590	350	210	150	115	75
Ubako	3-0	10x16	30½	4-9	700	600	37,900	165	7,360	40	40	690	400	240	170	130	85
Ubalm	4-8½	10x16	30½	4-9	700	600	38,900	165	7,360	40	40	690	400	240	170	130	85
Ubant	3-0	11x16	30½	4-9	900	600	42,300	175	9,450	40	40	890	530	320	225	175	115
Ubaog	4-8½	11x16	30½	4-9	900	600	43,000	175	9,450	40	40	890	530	320	225	175	115
Ubape	3-0	12x18	33	5-3	1,100	900	52,300	170	11,700	45	45	1,100	650	400	280	210	140
Ubare	4-8½	12x18	33	5-3	1,100	900	53,300	170	11,700	45	45	1,100	650	400	280	210	140
Ubase	4-8½	13x20	36	6 3	1 600	1 200	65 000	180	14 400	50	50	1 350	810	490	350	260	175
Ubaty	4-8½	14x22	40	7-0	1 700	1 600	79 000	190	17 400	65	55	1,650	975	590	420	320	210
Ubavu	4-8½	16x24	42	7-0	2 000	2,700	99 800	180	22,400	80	55	2,130	1,260	765	545	415	275

The above gauges represent locomotives in stock. Any practicable gauge can be furnished

We are prepared to furnish promptly figures on special types to meet special conditions

Figures for hauling capacity are based on a locomotive machine and rolling resistance of 25 pounds per ton of weight on drivers, and a frictional train resistance of 6½ pounds per ton of 2000 pounds. Where track and cars are in poor condition the resistance will be greatly increased. In such cases, therefore, allowance should be made for actual hauling capacities considerably less than those given in the table

FATE-ROOT-HEATH COMPANY

PLYMOUTH LOCOMOTIVE WORKS

Factory and Office

401 RIGGS AVE., PLYMOUTH, OHIO, U. S. A.

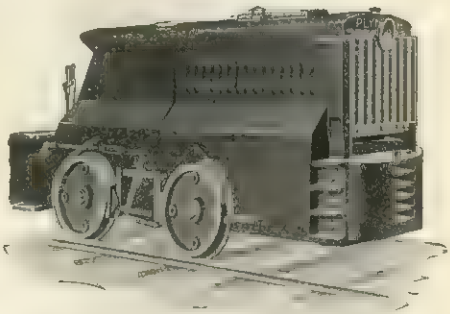
Manufacturers of

PLYMOUTH Gasoline Locomotives

Products

Plymouth Gasoline Locomotives, either friction or 4 Speed gear driven.

Model FL, Type 4, 4-Ton Plymouth Mine Type Locomotive



Model DLC, Type 4, 8-Ton Plymouth Mine Type Locomotive

Sizes

Friction Drive—3, 4 and 7 ton.
Gear Drive—4, 7, 8 and 15 ton.

Types

Friction Drive, 3, 4 and 7 ton—Type 2, for surface haulage; type 4, for underground haulage.

Gear Drive, 4, 7, 8 and 15 ton—Type 2, for surface haulage; 4, 7 and 8 ton, type 4, for underground haulage.

Gauges

Friction Drive, 3, 4 and 7 ton—18 to 56½ inch.
Gear Drive, 4 ton, 21½ to 56½ inch.
Gear Drive, 7 and 8 ton, 23⅝ to 56½ inch.
Gear Drive, 15 ton, 23⅝ to 56½ inch.

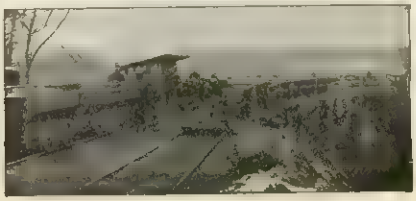
Haulage Capacities

Haulage capacity varies according to conditions of cars and track. Gross weight of cars and load on level track as follows:

Size	Friction Drive	Gear Drive
3-ton	27 to 77 tons	.....
4-ton	36 to 100 tons	46 to 150 tons
7-ton	63 to 226 tons	80 to 340 tons
8-ton	....	90 to 390 tons
15-ton	.....	180 to 785 tons

Economy

Plymouth Gasoline Locomotives are cheaper to operate and maintain than locomotives using other sources of power. Many Plymouth owners report a saving of 50 per cent over steam or electrical haulage.



Advantages

In the Plymouth Gasoline Locomotive, you buy these special advantages:

Low Purchase Cost.
Low Operating Cost.
Low Upkeep Cost.
Absolute Simplicity in Construction and Operation.
All Parts Easily Reached for Cleaning and Adjusting.
No Licensed Engineer Required.
Any Speed, Forward or Backward.
Equal Power, Forward or Backward.

Construction Features

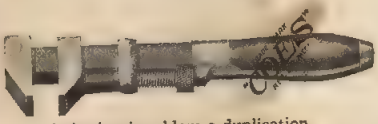
Heavy rigid frame. Low center of gravity. Well balanced on springs. Rides rough track easily. Derailments very rare. Simple and substantial construction throughout. Greatest accessibility of parts. Engine powerful and rugged. Bosch magneto ignition. All bearings either ball or Hyatt high duty roller. Powerful and efficient brakes. Simple, positive acting sanders.

Used in Coal Mining

Plymouth Gasoline Locomotives are splendidly adapted to either surface or underground haulage in Coal and Metal Mining as well as Quarrying, Sand and Gravel, Clay Plants, Logging, Plantations and General Industrial Haulage. Special Bulletins, showing installation views in each of these fields, will be gladly sent on request.

"TRADE MARK" COES

REG. U.S. PAT. OFF.



Knife-Handle sizes: 6-8-10-12-15-18-21".

The only original.

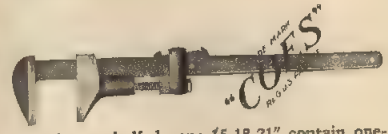
An imitation is seldom a duplication.

The Railroad Wrench.

Steel-Handle sizes: 4-6-8-10-12-15-18-21".

Key Model sizes: 28-36-48 and the 72" on special order.

The Husky Brother.



Factory packages: 4-6-8-10 & 12" contain one-half dozen; 15-18-21" contain one-third dozen.

Catalogs (English and Spanish), Stuffers, Placards, Counter Signs, and Coes Quality all the way

Our Address—Since 1841

COES WRENCH COMPANY

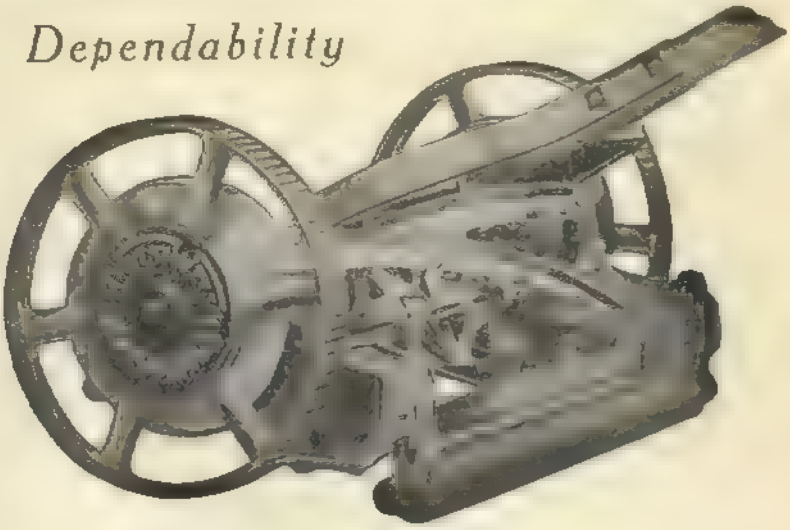
Worcester Mass.

SELLING AGENTS:

JOHN H. GRAHAM & CO.....113 Chambers St., N. Y. City

J. C. McCARTY & CO. .....29 Murray St., N. Y. City

Dependability



Are you filling all your local Lawn Mower requirements? Right now—today—some of the men in your town, connected with the golf club, parks, schools or cemeteries are buying lawn mowers. Are you getting your share of the lawn mower business in your town? Coldwell has a hand, horse or motor mower for every lawn requirement. These big sales will be profitable to you. Find these good prospects, write us and let us help you close with them.

Use your window display NOW!

SINCE 1867

COLDWELL

DEPENDABLE LAWN MOWERS

Hand, Horse, Motor & Gang

COLDWELL LAWN MOWER CO., NEWBURGH, N. Y., U. S. A.

FACTORY BRANCHES

DES MOINES, Iowa 319 South West Fifth Street CHICAGO, Ill. 4139 West Kinzie Street

COLT'S REVOLVERS
DOUBLE ACTION

POLICE POSITIVE SPECIAL

The most effective pocket and house arm on the market and by far the lightest and most compact revolver built to take this powerful ammunition
Blued steel barrel, jointless solid frame, double action, center fire, simultaneous ejection, checkered wood stocks, six shots

.32-20 Caliber
(.32 Winchester)

Nos.	2432B	2532B	2632B
Length barrel, inches	4	5	6
Length overall, inches	8½	9½	10½
Weight, ounces	22	23	24
Each	$45 70	45.70	45 70

.38 Caliber
(Uses .38 Long Colt; 38 Short Colt; .38 Colt Special, Full or Mid Range Loads.) .38 S. & W. Special,

Nos.	2438B	2538B	2638B
Length barrel, inches	4	5	6
Length overall, inches	8½	9½	10½
Weight, ounces	22	23	24
Each	$45.70	45 70	45.70

Nickel-plated finish can be furnished from factory; when wanted, substitute N for B in the catalog number

POLICE POSITIVE

The revolver with a grip. Light, compact, high velocity and penetration, very accurate. An ideal pocket or house weapon, adopted by the Police Departments of the principal cities of the United States and Canada Fitted with Colt positive lock

Blued steel barrel, jointless solid frame, double action, center fire, simultaneous ejection, checkered rubber stocks, six shots

.32 Caliber
(Uses .32 Colt Police Positive, Full and Gallery Loads; also .32 S. & W. Short and Long Cartridges, when barrel is stamped ".32 Police Ctg.")

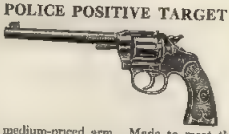
Nos.	*5332B	5432B	5532B	5632B
Length barrel, inches	2½	4	5	6
Length overall, inches	6¾	8¾	9¾	10¾
Weight, ounces	18½	20	21	22
Each	$43 50	43 50	43.50	43 50

.38 Caliber
Uses .38 Colt Police Positive and .38 S & W. Cartridges)

Nos.	5438B	5538B	5638B
Length barrel, inches	4	5	6
Length overall, inches	8¾	9¾	10¾
Weight, ounces	20	21	22
Each	$43.50	43.50	43 50

*For factory shipment only. Nickel-plated finish can be furnished from factory when wanted, substitute N for B in the catalog numbers

POLICE POSITIVE TARGET



A very fine, medium-priced arm. Made to meet the demand for a light, small caliber target revolver. It is well balanced, with light, smooth pull full Colt grip, and is suitable for both indoor and outdoor shooting Fitted with Colt positive lock.

Blued steel barrel, jointless solid frame, double action, rim fire, simultaneous ejection, checkered hard rubber stocks, six shots. Front sight adjustable for elevation; rear sight, with binding screw, adjustable for windage.

.22 Caliber

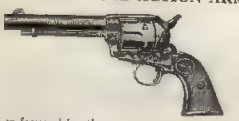
No. 5722SB—.22 Caliber Short, Long and Long Rifle (uses 22 Short, Long or Long Rifle Rim Fire Cartridges when barrel is stamped "Cal. .22"). Length of barrel, 6 inches; length overall, 10½ inches; weight, 22 ounces. . . . . Each, $48 00

No. 5722B—.22 Cal. Winchester Rim Fire (uses only the .22 W.F.R. Model 1890 Rifle Cartridge when barrel is stamped ".22 W.R.F."). Length of barrel, 6 inches; length overall, 10½ inches; weight, 22 ounces. . . . . Each, 48.00

.32 Caliber

No. 5732B—.32 Caliber Colt Police Positive (uses 32 Colt Police Positive, Full and Gallery Loads; also 32 S & W. Short and Long Cartridges, when barrel is stamped ".32 Police Ctg."). Length of barrel, 6 inches; length overall, 10½ inches; weight, 19 ounces . . . . . Each, $48 00

FRONTIER SINGLE ACTION ARMY



This weapon is favored by those users who require a combination of reliability, durability and simplicity in mechanism. It is carried with the hammer resting in the safety notch.

Blued steel barrel and straps, solid case hardened steel frame, single action, center fire, rod ejection, checkered hard rubber stocks, six shots.

.32-20 Caliber
(.32 Winchester)

Nos.	7432B	7532B	*7732B
Length barrel, inches	4¾	5½	7½
Length overall, inches	10½	11	13
Weight, ounces	37	38	40
Each	$54.40	54 40	54 40

.38-40 Caliber
(.38 Winchester)

Nos.	7438B	7538B	*7738B
Length barrel, inches	4¾	5½	7½
Length overall, inches	10¼	11	13
Weight, ounces	37	38	40
Each	$54 40	54 40	54 40

.45 Caliber
(Uses .45 Colt Cartridges)

Nos.	7445B	7545B	*7745B
Length barrel, inches	4¾	5½	7½
Length overall, inches	10¼	11	13
Weight, ounces	37	38	40
Each	$54 40	54 40	54 40

* For factory shipment only Nickel plated finish can be furnished from factory, when wanted, substitute N for B in the catalog numbers Also made for 44 Russian, 44 S & W Special 44-40 (44 Winchester), at same prices, factory shipment

POCKET POSITIVE REVOLVERS

Contains the same mechanism as the Police Positive, with a smaller handle and is lighter in weight Fitted with Colt positive lock.
Blued steel barrel, jointless solid frame, double action, centre fire, simultaneous ejection, checkered hard rubber stocks, six shots

(Uses .32 Colt Police Positive, Full and Gallery Loads; also .32 S & W Short and Long Cartridges when barrel is stamped ".32 Police Ctg.")

.32 Caliber

Nos.	*5132B	5232B	*5632B
Length of barrel, inches	2½	3½	6
Length overall, inches	6½	7½	10
Weight, ounces	16	17	19½
Each	$42 40	42.40	42.40

* For factory shipment only. Nickel-plated finish can be furnished from factory; when wanted, substitute N for B in the catalog numbers.

COLT'S AUTOMATIC PISTOLS

Accidental discharge is absolutely impossible. The action of these pistols is automatic, except that the trigger must be pulled to fire each shot continued discharge will not result from one pull of the trigger. Can be discharged at rate of five to eight shots per second, the cartridges being automatically supplied from a detachable magazine inserted in the handle of the pistol, and the empty shells being ejected.

GOVERNMENT MODEL

.45 Caliber—Adopted by the U. S. Government

Blued steel frame, checkered walnut stocks. Capacity of magazine, 7 shots. For .45 caliber rimless, smokeless cartridges. Equipped with Colt automatic grip safety and safety lock

No. 9545B—.45 Caliber, Government Model. Length of barrel, 5 inches; length overall, 8½ inches; weight, 39 ounces . Each, $58.70

No. 45M—Extra Magazines for No. 9545B ..... Each, 2 14

MILITARY MODEL

.38 Caliber

Blued steel frame, checkered hard rubber stocks. Capacity of magazine, 8 shots. For .38 caliber rimless, smokeless cartridges.

No. 9638B—.38 Caliber Military Model Length of barrel 6 inches; length overall, 9 inches, weight, 38 ounces Each $69 60

No. 38M Extra Magazines for No. 9638B Each, 2 14

POCKET MODEL

.38 Caliber

Blued steel frame, checkered hard rubber stocks. Capacity of magazine, 7 shots. For .38 caliber rimless, smokeless cartridges.

No. 9438B—.38 Caliber Pocket Model. Length of barrel, 4½ inches; length overall, 7½ inches; weight, 32 ounces Each, $67 40

No. 38M—Extra Magazines for No 9438B .....Each, 2.14

POCKET MODEL HAMMERLESS

.32 and .380 Caliber

Besides the safety in the action, which does not permit hammer to be released unless action is fully closed, this weapon has two additional operating safeties, the slide lock and automatic grip safety

Blued steel frame, checkered hard rubber stocks. For .32 or .380 caliber rimless, smokeless cartridges. Length of barrel, 3¾ inches; length overall, 6¾ inches; weight, 23 ounces.

.32 Caliber

Capacity of magazine, 8 shots.

No. 9432B—Blued Finish .....Each, $32 70
No. 9432N—Nickel Plated .....Each, 32.70
No. 9432P—Nickel Plated, Pearl stocks.....Each, 44.70
No. 32M Extra Magazines.....Each, 1.30

.380 Caliber

Capacity of magazine 7 shots.

No. 94380B—Blued Finish.....Each, $32.70
No. 94380N Nickel Plated .....Each, 32.70
No. 94380P Nickel Plated, Pearl stocks.....Each, 44 70
No. 380M Extra Magazines.....Each, 1.30

.25 Caliber

An extra light-weight, very small size, flat and compact weapon Equipped with Colt automatic grip safety and safety disconnector, which, when magazine is withdrawn, positively breaks all connection between trigger and sear so that if a cartridge is left in barrel, the arm cannot be discharged, even if trigger is pulled

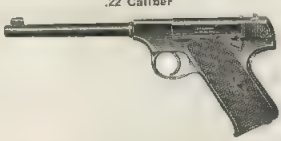
Blued steel frame, with case-hardened trigger, checkered hard rubber stocks Capacity of magazine 6 shots For .25 caliber rimless, smokeless cartridges.

Length of barrel, 2 inches; length overall, 4½ inches; weight, 13 ounces

No. 9225B—25 Caliber, Blued Finish. .....Each, $27 20
No. 9225N—25 Caliber, Nickel Plated .....Each, 27 20
No. 9225P .25 Caliber, Nickel Plated, Pearl stocks.....Each, 39.20
No. 25M—Extra Magazines for above. .....Each, 1.12

TARGET MODEL HAMMERLESS

.22 Caliber



A high-grade automatic pistol, adapted for the economical and easily obtained .22 caliber long rifle cartridge, Lesmok or semi-smokeless rim fire Practical, accurate and very popular. Bead front sight, adjustable for elevation. Rear sight, with adjusting screw, adjustable for windage Blued steel frame, checkered walnut stocks. Capacity of magazine, 10 shots

No. 9022B—22 Caliber Target Model. Length of barrel, 6½ inches; length over all, 10½ inches; weight, 28 ounces .Each, $52 20
No. 22M Extra Magazines for No. 9022B. .....Each, 3 40

REVOLVERS

COLT

NEW SERVICE, HAMMER

Double action, jointless solid frame, simultaneous ejection, full blued finish, rubber stock.

.45 Caliber, 6 Shots, shoots .45 Colt center fire cartridges.

Each

No. 45NS—5½ in. barrel, 10¾ in. long overall, wt. each 40 oz. $34.00

One in a box.

POLICE POSITIVE, SPECIAL, HAMMER

Double action, jointless solid frame, simultaneous ejection, full blued finish, checkered walnut stock.

.32 Caliber, 6 Shots, shoots .32 Winchester center fire cartridges.

Each

No. 32-20 P. P. S./4—4 in. barrel, 8½ in. long overall, wt. each 22 oz. $28.50

No. 32-20 P. P. S./5—5 in. barrel, 9½ in. long overall, wt. each 23 oz. 28.50

.38 Caliber, 6 Shots, shoots .38 Short Colt, Long Colt, Special colt, S. & W. Special full or mid-range loads.

Each

No. 38 P. P. S. /4—4 in. barrel, 8½ in. long overall, wt. each 22 oz. $28.50

No. 38 P. P. S. /5—5 in. barrel, 9½ in. long overall, wt. each 23 oz. 28.50

One in a box.

POCKET POSITIVE, HAMMER

Double action, jointless solid frame, simultaneous ejection, full blued finish, rubber stock.

.32 Caliber, 6 Shots, shoots .32 Colt Police Positive center fire cartridges, also .32 S. & W. short and long cartridges when barrel is stamped ".32 Police Cartridge."

Each

No. 32 P. P./3½—3½ in. barrel, 7½ in. long overall, wt. each 16 oz. $26.50

One in a box.

REVOLVERS

SMITH & WESSON

SAFETY HAMMERLESS

Special double action, jointed frame, automatic ejector.

Safety lever and trigger must act in unison. Impossible to discharge the arm otherwise than deliberately.

.32 Caliber, 5 Shots, shoots .32 S. & W. center fire cartridges.

Nickel Plated, Black Rubber Stock

Each

No. 32 S. H. N.—3 in. barrel, 6¾ in. long overall, wt. each 14¼ oz. $26.75

Blued Black Rubber Stock

Each

No. 32 S. H. B.—3 in. barrel, 6¾ in. long overall, wt. each 14¼ oz. $26.75

Nickel Plated, Pearl Stock

Each

No. 32 S. H. P.—3 in. barrel, 6¾ in. long overall, wt. each 14¼ oz. $31.70

One in a box

Double action, jointed frame, automatic shell ejector, safety lever and trigger must act in unison, impossible to discharge the arm otherwise than deliberately, black rubber stock.

.38 Caliber, 5 Shots, shoots .38 S. & W. center fire cartridges, penetrates four and one half ⅞ in. pine boards

Nickel Plated, Checkered Walnut Stock

Each

No. 38 S. H. N./3¼—3¼ in. barrel, 7⅛ in. long overall, weight each 13¾ oz. $29.00

No. 38 S. H. N./4—4 in. barrel, 8¼ in. long overall, wt. each 13¾ oz. 29.00

Blued, Checkered Walnut Stock

Each

No. 38 S. H. B./3¼—3¼ in. barrel, 7⅛ in. long overall, wt. each 13¼ oz. $29.00

No. 38 S. H. B./4—4 in. barrel, 8¼ in. long overall, wt. each 13¾ oz. 29.00

Nickel Plated, Pearl Stock

Each

No. 38 S. H. P./3¼—3¼ in. barrel, 7⅛ in. long overall, wt. each 13¼ oz. $33.95

No. 38 S. H. P./4—4 in. barrel, 8¼ in long overall wt. each 13¾ oz. 33.95

One in a box.

HAND EJECTOR, HAMMER

Solid frame, double action, swing-out cylinder, hand-ejector, safety hammer block, black rubber stock

.32 Caliber, 6 Shots, shoots .32 S. & W. long center fire cartridges, penetrates four and one half ⅞ in. boards.

Nickel Plated, Black Rubber Stock

Each

No. 32 H. E. N./3¼ 3¼ in. barrel, 7¼ in. long overall, wt. each 13 oz. $29.00

No. 32 H. E. N./4¼—4¼ in. barrel, 8¼ in. long overall, wt. each 13½ oz. 29.00

Blued, Black Rubber Stock

Each

No. 32 H. E. B./3¼—3¼ in. barrel, 7¼ in. long overall, wt. each 13 oz. $29.00

No. 32 H. E. B./4¼—4¼ in. barrel, 8¼ in long overall, wt. each 13½ oz. 29.00

One in a box.

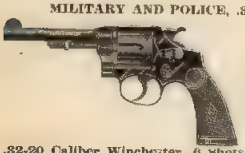
REVOLVERS
SMITH & WESSON
REGULATION POLICE

Solid frame, double action, swing-out cylinder, hand ejector, new patent safety hammer block.

.32 Caliber, 6 Shots—Shoots .32 S. & W. and .32 S. & W. long center fire cartridges, penetrates four and one-half ⅝ in. pine boards

	Nickel Plated, Checked Walnut Stock	Each
No. 32 R. P. N./3¼	—3¼ in. barrel, 7½ in. long overall, weight each 18 oz.	$30.50
No. 32 R. P. N./4¼	—4¼ in. barrel, 8½ in. long overall, weight each 18½ oz	30.50
	Blued, Checked Walnut Stock	**Each**
No. 32 R. P. B./3¼	—3¼ in. barrel, 7½ in. long overall, weight each 18 oz.	$30.50
No. 32 R. P. B./4¼	—4¼ in. barrel, 8½ in. long overall, weight each 18½ oz.	30.50

MILITARY AND POLICE, .32-20 WINCHESTER



Solid drop forged frame barrel and working parts, swing-out nickel steel cylinder, hardened steel bearings, sight fixed 1/10 inch thick square section front and flat top square notch rear.

.32-20 Caliber Winchester, 6 Shots—Shoots .32-20 (.32 Winchester) center fire cartridges

	Nickel Plated, Square Butt, Walnut Stock	Each
No. 32-20 M. P. N./4	—4 in. barrel, 9⅛ in. long overall, weight each 30½ oz.	$32.50
No. 32-20 M. P. N./5	—5 in. barrel, 10⅛ in. long overall, weight each 31¼ oz.	32.50
No. 32-20 M. P. N./6	—6 in. barrel, 11⅛ in. long overall, weight each 32½ oz.	32.50
	Blued, Square Butt, Walnut Stock	**Each**
No. 32-20 M. P. B./4	—4 in. barrel, 9⅛ in. long overall, weight each 30½ oz.	$32.50
No. 32-20 M. P. B./5	—5 in. barrel, 10⅛ in. long overall, weight each 31¼ oz.	32.50
No. 32-20 M. P. B./6	—6 in. barrel, 11⅛ in. long overall, weight each 32½ oz.	32.50

This arm can be furnished with target sights, blued finish only, at an additional cost.

MILITARY AND POLICE, .38 S. & W. SPECIAL

.38 Special Caliber, 6 Shots—Shoots .38 S. & W. special smokeless, .38 special Colt, .38 S. & W. special target smokeless, .38 S & W. special mid range, .38 long and 38 short Colt cartridges.

	Nickel Plated, Square Butt, Walnut Stock	Each
No. 38 M. P. N. W./4	—4 in. barrel, 9⅛ in. long overall, weight each 29¼ oz.	$32.50
No. 38 M. P. N. W./5	—5 in. barrel, 10⅛ in. long overall, weight each 30 oz.	32.50
No. 38 M. P. N. W./6	—6 in. barrel, 11⅛ in. long overall, weight each 31 oz.	32.50
	Blued, Square Butt, Walnut Stock	**Each**
No. 38 M. P. B. W./4	—4 in. barrel, 9⅛ in. long overall, weight each 29¼ oz.	$32.50
No. 38 M. P. B. W./5	—5 in. barrel, 10⅛ in. long overall, weight each 30 oz.	32.50
No. 38 M. P. B. W./6	—6 in. barrel, 11⅛ in. long overall, weight each 31 oz.	32.50

This arm in the 6 inch length can be furnished with target sights, blued finish only, at an additional cost.

REVOLVERS
SMITH & WESSON
MILITARY AND POLICE, .38 S. & W. SPECIAL

Solid drop forged frame, barrel and working parts, swing-out, nickel steel cylinder, hardened steel bearings, patridge type sights, sights fixed 1/10 inch thick square section front and flat top sqquare, notch rear.

.38 Special Caliber, 6 Shots—Shoots .38 S. & W. special smokeless, .38 special Colt, .38 S. & W. special target smokeless, .38 S. & W. special mid range, .38 long and 38 short Colt cartridges.

	Nickel Plated, Round Butt, Rubber Stock	Each
No. 38 M. P. N. R./4	—4 in. barrel, 8⅞ in. long overall, weight each 28¾ oz.	$32.00
No. 38 M. P. N. R./5	—5 in. barrel, 9⅞ in. long overall, weight each 29¼ oz.	32.00
	Blued, Round Butt, Rubber Stock	**Each**
No. 38 M. P. B. R./4	—4 in. barrel, 8⅞ in. long overall, weight each 28¾ oz.	$32.00
No. 38 M. P. B. R./5	—5 in. barrel, 9⅞ in. long overall, weight each 29¼ oz.	32.00

MILITARY MODEL

Solid drop forged frame barrel and working parts, swing-out nickel steel cylinder, hardened steel bearings, fixed thin blade front and U notch rear sights

.44 Caliber, 6 Shots—Shoots .44 S. & W. special with lead, full patched or metal pointed bullet, .44 special mid range and .44 Russian center fire cartridges.

	Nickel Plated, Square Butt, Checked Walnut Stock	Each
No. 44 M. N./6½	—6½ in. barrel, 11¾ in. long overall, weight each 38 oz.	$36.75
	Blued, Square Butt, Checked Walnut Stock	**Each**
No. 44 M. B./6½	—6½ in. barrel, 11¾ in. long overall, weight each 38 oz.	$36 75

U. S. ARMY, 1917 MODEL

Double solid frame, heat treated alloy steel swing-out cylinder, hardened steel bearings, fixed thin blade front and U notch rear sights.

.45 Caliber, 6 Shots—Shoots .45 automatic rimless pistol cartridges in clips or .45 auto-rim cartridges without clips.

	Blued Square Butt, Checked Walnut Stock	Each
No. 45 A. B./5½	—5½ in. barrel, 10¾ in. long overall, weight each 36¼ oz.	$36.75
Cartridge Clips	—For above	.10

PISTOLS, Liquid

Cosmo Mfg. Co., 4651 Fulton, Chicago, Ill.
Daisy Mfg. Co., Plymouth, Mich.
Gropper (M.) & Sons, 34 34th, Brooklyn, N. Y.
Lisk (S.) & Bro., 14 E. 15th, New York, N. Y.
Parker, Stearns & Co., 256 Sheffield Av., Brooklyn, N. Y.
Pia, Peter P., 129 White, New York, N. Y.

PISTOLS, Toy

Arcade Mfg. Co., Freeport, Ill. (Paper Cap)
Arrow Novelty Co., 108 E. 16th, New York, N. Y.
Art Metal Wks., 7 Mulberry, Newark, N. J. "Ronson Repeater"
Bogert & Hopper, 67 Barclay, New York, N. Y. (Wood)
Cannon (Florence V.) Co., Camden, N. J.
Daisy Mfg. Co., Plymouth, Mich.
Edwards Mfg. Co., 629 Eggleston Av., Cincinnati, O. "Scout"
Elastic Tip Co., 376 Atlantic Av., Boston, Mass.
Erickson (C. E.) & Co., Des Moines, Ia.
Estes (E. B.) & Sons, 362 5th Av., New York, N. Y. (Wood)
Federal-Buster Corp., 304 Lexington Av., Pittsburgh, Pa. (Repeating) (Paper Cap)
Hugro Mfg. Co., Warsaw, Ind.
Johnson (W. P.) Co., Des Moines, Ia. (Repeating Ball)
Kenton Hdw. Co., Kenton, O. "Kentontoys" (Paper Cap & Blank Cartridge)
Kentontoys—See Kenton Hdw. Co.
Kilgore Mfg. Co., Westerville, O. (Repeating)
Newton Mfg. Co., Newton, Ia. (Repeating Ball)
Novelty Sales Co., Lyons, Ia.
Parker Bros., Salem, Mass.
Rockaway Mfg. Co., 420 Culvert, Cincinnati, O.
Ronson Repeater—See Art Metal Wks.
Schoenhut (A.) Co., E. Hagert & Sepviva Sts., Philadelphia, Pa.
Scout—See Edwards Mfg. Co.
Steel Stamping Co., Lorain, O.
Stevens (J. & E.) Co., Cromwell, Conn. (Paper Cap)
Upton Machine Co., St. Joseph, Mich.

PISTON PIN BUSHING REAMERS—See Reamers, Piston Pin Bushing

PISTON PINS—See Pins, Piston

PISTON RINGS—See Rings, Piston

PISTONS

Cochran Co., 838 John R., Detroit, Mich.
Jaeger—See Trenton Patent Mfg. Co.
Trenton Patent Mfg. Co., 112 Murray, Trenton, N. J. "Jaeger"
★For descriptive data of the above, see index on page 6

PITCH FORKS—See under Forks

PITCH GAGES, Screw—See Gages, Screw

PITCH, Roofing

Alcatraz Co., Richmond, Va.
Tar Products Corp., Providence, R. I.

PITCHER SPOUT PUMPS—See Pumps, Pitcher Spout

PITCHING HORSE SHOES—See Shoes, Horse, Pitching

PIVOTS, Sash—See Centers, Sash

PLACERS, Trap

Triumph Trap Co., Oneida, N. Y.

PLAIN and ORNAMENTAL RIDGING—See Rolls, Ridge

PLAIN WIRE—See Wire, Plain

PLANE IRONS—See Irons, Plane

PLANER JACKS—See Jacks, Planer

PLANER TOOL HOLDERS—See Holders, Tool, Lathe, Planer, Etc.

PLANER TOOLS—See Tools, Lathe and Planer

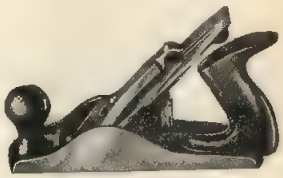
PLANES

Bailey—See Stanley Wks.
Bed Rock—See Stanley Wks.

Quality Iron Planes at Prices Lower than Usual

Our Planes are the regular STANDARD IRON PLANES. Attractive in appearance; made of the best materials obtainable; first class workmanship. Show self-evident merit and are easy to sell.

The Cutters are made of the best Crucible Tool Steel, manufactured especially for the purpose, scientifically heat-treated and tempered by the most modern process. Every Cutter is tested for hardness on cutting edge.



No. 502 7¼" Block Plane, 1⅝" Cutter.

No. 501 7½" Adjustable Block Plane, 1⅝" Cutter.

No. 504 9" Smooth Plane, 2" Cutter.

No. 504C 9" Smooth Plane, Corrugated Bottom.

No. 505 14" Jack Plane, 2" Cutter.

No. 505C 14" Jack Plane, Corrugated Bottom.

On request Samples will be sent on approval at Our Expense.

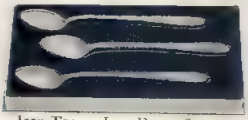
Comar Manufacturing Co.
109 Lafayette St., New York City

COMMUNITY PLATE

Baby Spoon (Bent Handle)

Sugar Spoon

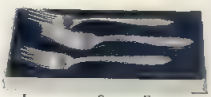
Cold Meat or Serving Fork
Small Cold Meat or Sardine Fork


Iced Tea or Iced Drink Spoons

Jelly Server

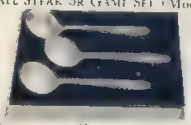
Pierced Round Server

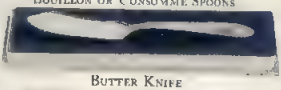
Individual Butter Spreaders


Individual Salad Forks

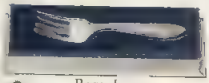
Pickle or Olive Fork

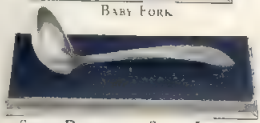
Small Steak or Game Set (H H)
Small Steak or Game Set (Mod H)


Bouillon or Consomme Spoons


Butter Knife

Knife and Fork Set


Baby Fork


Salad Dressing or Small Ladle
Serving or Gravy Ladle

Large Berry or Serving Spoon
Small Berry or Preserve Spoon

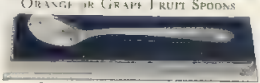
Oyster or Seafood Forks

Child's Set (Fork, Spoon and H H Knife)
Child's Set (Fork, Spoon and Flat Knife)

Pierced Pastry Server

After Dinner Coffee Spoons
5 O'clock Tea or Sherbet Spoons

Orange or Grape Fruit Spoons


Olive or Salted Nut Spoon

COMMUNITY PLATE

THE 26-PIECE CHEST-TRAY

Free, with Each Silverware Set

This new Chest-Tray—furnished free with each 26-pc set of COMMUNITY PLATE—is both beautiful and practical. The lid is readily detachable. Thus the Chest becomes a most useful Tray—for store purposes and in the home Slips easily into the sideboard drawer

A beautiful, distinctive setting for the Silverware With cover—a Chest With cover removed—a Tray

Contents

6 Teaspoons
6 Table Spoons
6 Dinner Knives
6 Dinner Forks
1 Butter Knife
1 Sugar Spoon

Individual Pieces	Gross	Assort	Plate Tray	Stone Tray	*Stainless Knives Have the Call. Why not specify "Stainless De Luxe?"* CHEST TRAYS (26 PIECES)	Dealers' Prices Subject to Regular Trade Discount	Prices to Consumers
					KNIVES WITH PLATED BLADES	Each	Each
12584	11584	10584	6584	9584	Hollow Handle Dinner Knives and Flat Dinner Forks	$39.12	$30.50
12580	11580	10580	6580	9580	Hollow Handle Dessert Knives and Flat Dessert Forks	28.56	20.00
12585	11585	10585	6585	9585	Modeled Handle Dinner Knives and Flat Dinner Forks	34.62	27.25
12581	11581	10581	6581	9581	Modeled Handle Dessert Knives and Flat Dessert Forks	34.16	26.75
					KNIVES WITH STAINLESS BLADES		
12579	11579	10579	6579	9579	Hollow Handle Dinner Knives and Flat Dinner Forks	40.36	31.50
12553	11553	10553	6553	9553	Hollow Handle DeLuxe Dinner Knives and Flat Dinner Forks	42.00	32.50
11487	11487	10487	6487	9487	Hollow Handle Dessert Knives and Flat Dessert Forks	30.68	21.00
10577	11577	10577	6577	9577	Modeled Handle Dinner Knives and Flat Dinner Forks	35.92	28.00
					26-PIECE CHESTS		
150	150	150	150	150	Seal Grain Leatherette Flat—Empty	$12.50	$ 7.75
10983	11983	10983	6983	9983	With H. H. Dinner Knives	31.60	24.00
10984	11984	10984	6984	9984	With Modeled Handle Dinner Knives	47.10	35.00
130	130	130	130	130	Heavy Mahogany, Flat—Empty	19.60	12.50
10934	11934	10934	6934	9934	With H. H. Dinner Knives	38.70	43.00
10905	11905	10905	6905	9905	With Modeled Handle Dinner Knives	54.20	40.00
148	148	148	148	148	Genuine Mahogany, with Drawer—Empty	20.00	15.00
10848	11848	10848	6848	9848	With H. H. Dinner Knives	39.10	47.00
10947		10947	6947	9947	With Modeled Handle Dinner Knives	54.60	50.00

Add-a-Piece Cabinets

To [illegible] 1 Hollow Handle Knives	Dealer's Prices Subject to Regular Trade Discount	Prices to Consumers
36 to 60 Piece Cabinet (with 45 pieces)	$105.20	$77.00
55 to 98 Piece Cabinet (with 72 pieces)	[illegible]	170.00
100 to 200 Piece Cabinet (with 140 pieces)	[illegible]	240.00
200 to 300 piece Cabinet (with 255 piece[illegible]	[illegible]	340.00

NOTE—If Stainless Blade Knives are desired in any Cabinet add the difference in cost between Plated and Stainless Blade Knives listed on Page 1

COMMUNITY PLATE

SILVERWARE of DISTINCTION

Bird of Paradise	Grosvenor	Adam	Patrician	Sheraton	At your Service for 50 years	Dealers' Prices Subject to Regular Trade Discount	Prices to Consumers
					SPOONS—Six in Box	Per Doz.	Set of Six
12602	11602	10602	6602	9602	Tea	$ 9.00	$3.60
12603	11603	10603	6603	9603	Dessert	17.40	7.00
12605	11605	10605	6605	9605	Table	18.00	7.20
12604	11604	10604	6604	9604	Soup (Round Bowl)	18.00	7.20
					FORKS—Six in Box		
12607	11607	10607	6607	9607	Dinner or Medium	18.00	7.20
12606	11606	10606	6606	9606	Dessert	17.40	7.00
					KNIVES (Plated Blades)—Six in Gift Box		
12611	11611	10611	6611	9611	Hollow Handle Dinner or Medium	24.48	9.90
12612	11612	10612	6612	9612	Hollow Handle Dessert	20.48	9.75
12615	11615	10611	6611	9611	Modern Bar Dessert or Medium	24.00	10.25
12616	11616	10616	6616	9616	Modeled Handle Dessert	17.68	6.50
					KNIVES (Stainless Blades)—Six in Gift Box		
12664	11664	10664	6664	9664	Hollow Handle Dinner or Medium	29.48	11.00
12665	11665	10665	6665	9665	Hollow Handle Deluxe Stainless Dinner	32.76	12.00
x2626	11626	10626	6626	9626	Hollow Handle Dessert	28.72	10.75
x2594	11594	10594	6594	9594	Modeled Handle Dinner or Medium	20.60	7.50

COMMUNITY PLATE

CORRECT SERVICE PIECES
KNIFE & FORK SETS

EVERY article Listed on this page lends itself admirably to gift giving, the range of pieces permits the widest latitude in selection. And gifts like these are in season the year around for Weddings, Anniversaries, Birthdays, and for similar occasions.

More and more dealers are coming to the idea of displaying such items in price groups of $1 to $5 and $5 to $10, etc., enabling customers to select from price groups of their own choosing.

Bird of Paradise	Grosvenor	Adam	Patricia	Sheraton	*All Pieces Listed on this Page are Packed in Blue Velvet Lined Gift Boxes*	Dealer's Prices Subject to Regular Trade Discount	Prices to Consumers
					SPOONS	Per Doz.	
2[illegible]	11623	10625	6625	9625	*Coffee, ... 6 in box	$2 76	$3 75 set
1[illegible]	11601	10601	6601	9601	*5 O'Clock Tea or Sherbet, ... 6 in box	3 15	4 50 set
1[illegible]	11622	10622	6622	9622	*Bouillon or Consomme, ... 6 in box	4 65	6 00 set
1[illegible]	11629	10629	6629	9629	*Iced Tea or Iced Drink, ... 6 in box	4 00	6 00 set
1[illegible]	11637	10637	6637	9637	Ice Cream or Sundae, ... 6 in box	3 75	5 00 set
1[illegible]	11641	10641	6641	9641	*Orange or Grapefruit . . . . . 6 in box	3 75	5 00 set
1[illegible]	11647	10647	6647	9647	*Small Berry or Pa[illegible]ve . . . . . 12 in box	37 44	7 50 each
12[illegible]	11620	10620	6620	9620	*Large Berry or Serv[illegible] . . . . . 6 in box	46 72	4 25 each
12[illegible]	11619	10619	6619	9619	*Baby (Brat Handle) . . . . . 12 in box	14 88	1 60 each
12[illegible]	11624	10624	6624		Baby (Straight Handle) . . . . . 12 in box	12 88	1 60 each
1[illegible]	11650	10650	6650	9650	*Sugar . . . . . 6 in box	18 72	3 75 each
12[illegible]	11483	10483	6483	9483	Jam or Conserve, ... 12 in box	18 72	2 [illegible] each
12[illegible]	11[illegible]	10[illegible]	[illegible]	[illegible]	*Orange Salad Set . . . . . 1 in box	20 [illegible]	2 [illegible] each
1[illegible]	11621	10621	6621	9621	Pierced Bon Bon . . . . . 12 in box	33 84	2 25 each
12[illegible]	11636	10636	6636	9636	Relish or Chutney . . . . . 12 in box	22 56	1 [illegible] each
					FORKS		
12[illegible]	1667	10667	6667	9667	*Cold Meat or Serving . . . . . 1 in box	33 84	2.25 each
12[illegible]	1668	10668	6668	9668	*Small Cold Meat . . . . . 1 in box	26 16	1 75 each
1[illegible]	1660	10660	6660	9660	Individual Pie . . . . . 6 in box	20.00	8.00 set
[illegible]	1679	10679	6679	9679	*Oyster or Seafood, ... 6 in box	12.48	5 00 set
[illegible]	11646	10646	6646	9646	*Pickle or Olive . . . . . 1 in box	22 56	1 50 each
[illegible]	1688	10688	6688	9688	*Individual Salad or Pastry, ... 6 in box	17 52	7 00 set
[illegible]	1632	10632	6632	9632	Ice Cream or Sherbet . . . . . 6 in box	15.00	6.00 set
[illegible]	1650	10650	6650	[illegible]	Cake . . . . . 1 in box	37 44	2 50 each
[illegible]	1661	10661	6661	[illegible]	Lemon or Relish . . . . . 1 in box	14.88	1.00 each
[illegible]	11628	10628	6628	[illegible]	*Baby (Straight Handle) . . . . . 1 in box	14.88	1.00 each
					KNIVES (PLATED BLADE)		
12695	11695	10695	6695	9695	*Butter, ... 1 in box	18.72	1.25 each
12697	11697	10697	6697	9697	*Individual Butter Spreaders (Flat Handle) . . . . . 6 in box	15.00	6.00 set
12[illegible]	11[illegible]	10[illegible]	[illegible]	[illegible]	Individual Butter Spreaders (Full Length Handle) . . . . . 6 in box	21.[illegible]	8.00 set
12[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Cake or Bread . . . . . 1 in box	63 84	4.00 each
					KNIFE AND FORK SETS (PLATED BLADES)		
					(6 KNIVES AND 6 FORKS)	Per Set	
12742	11742	10742	6742	9742	*Hollow Handle Dinner Knives and Flat Dinner Forks, ...	22.50	17.20 set
12743	11743	10743	6743	9743	Hollow Handle Dessert Knives and Flat Dessert Forks	21.[illegible]	16.75 set
12801	1,803	10803	6803	9801	Moulded Handle Dinner Knives and Flat Dinner Forks	2400	11 8 set
12982	11982	10982	6982	9982	Modeled Handle Dessert Knives and Flat Dessert Forks	17.34	13 5[illegible] set
					(WITH STAINLESS BLADE KNIVES)		
12598	11598	10598	6598	9598	Hollow Handle Dinner Knives and Flat Dinner Forks	23.74	8.25 set
12597	11597	10597	6597	9597	Hollow Handle Deluxe Dinner Knives and Flat Dinner Forks	25.38	3.25 set
12599	11599	10599	6599	9599	Hollow Handle Dessert Knives and Flat Dessert Forks, ...	23.06	[illegible] set
12597	11597	10597	6597	9597	Modeled Handle Dinner Knives and Flat Dinner Forks	19.30	4.75 set
						Per Doz.	
12704	11704	10704	6704	9704	Fruit (Hollow Handle), ... 6 in box	27.00	10.00 set
12698	11698	10698	6698	9698	Fruit (Modeled Handle) . . . . . 6 in box	17.68	6.50 set
					LADLES		
12715	11715	10715	6715	9715	*Salad Dressing or Small . . . . . 1 in box	30.00	2.00 each
12717	11717	10717	6717	9717	*Serving or Gravy . . . . . 1 in box	11 44	2.50 each
1277[illegible]	1,721	10721	672[illegible]	9721	Medium Soup or Serving, ... 1 in box	112 [illegible]	7.50 each
					CARVERS (STAINLESS BLADES)	Per Set	
12725	11725	10725	6725	9725	Large (3-piece, Knife, Fork and Steel) Carving Set (H. H.)	21.33	10.00 set
12728	11728	10728	6728	9728	*Small, (2 piece) Steak or Game (Hollow Handle)	8.98	6.50 set
12596	11596	10596	6596	9596	*Small (2 piece) Steak or Game (Modeled Handle	7.[illegible]4	5.50 set
						Pair	
12689	.1689	10689	6689	9689	Game Shears . . . . . 1 in box	13 32	10.00 pa
					MISCELLANEOUS	Per Doz	
12708	11708	10708	6708	9708	Sugar Tongs . . . . . 1 in box	23.[illegible]	50 cac[illegible]
12623	11623	.0623	6623	9623	*Jelly Server . . . . . 1 in box	23.[illegible]	50 [illegible]
12484	11484	10484	6484	9484	*Pierced Pastry or Pie Server . . . . . 1 in box	9[illegible]	3.00 each
1[illegible]	1[illegible]	1[illegible]	[illegible]	[illegible]	*Pierced Roast Server for Tomatoes, Cucumbers, etc. . . . . 1 in box	23.12	3.00 each
12815	11815	10815	6815	9815	Cheese Knife or Server (Hollow Handle) . . . . . 1 in box	37.44	2.50 each
12710	11710	10710	6710	97 0	Pie or Ice Cream Server (Hollow Handle) . . . . . 1 in box	60.00	5.00 each
					SETS	Pr. Set	
1[illegible]	1718	13738	6718	.	Baby (Bent Spoon and Straight Fork)	7.48	2.00 set
2[illegible]	566	0566	6566		Baby (Straight Spoon and Straight Fork)	7.48	2.00 set
[illegible]	1737	.0737	6737	9737	*Child's (Spoon, Fork and Knife)	3.[illegible]	1.00 set
1[illegible]	1735	10735	6735	9735	*Child's (Spoon, Fork and Hollow Handle Knife), .	5.[illegible]	2.00 set
1[illegible]	1729	10729	6729	9729	Butter and Sugar	3.[illegible]	2.5[illegible] set
1[illegible]	1[illegible]	10[illegible]	6[illegible]	[illegible]	Cake (Cake Knife and Cake Fork)	8.44	6.50 set

*Illustrated on opposite page.

NOTE—When number [illegible] pieces [illegible] made

All Prices Subject to Change without Notice

COMMUNITY PLATE

SHERATON DESIGN

GREY FINISH

KNIVES (Stainless Blades)
... Lined Gift Box

	Per Doz.
Hollow Handle Dinner	$10.72

KNIVES (Plated Blades)
Six in Blue Velvet Lined Gift Box

Hollow Handle Dessert	
Modeled Handle Dinner	

CONCORDIA ELECTRIC COMPANY

389-391 Union Trust Bldg., PITTSBURGH, PA.

Manufacturers of the

"CEAG" Electric Safety Mine Lamp

Superior Features in "CEAG" Cap and Hand Lamps

Greatest Volume of Light

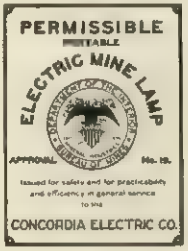
Dry Electrolyte Battery—No Leakage

Simplicity of Construction with Fewest Number of Parts

All Repairs Can Be Made By Handy Man in Your Lamp House

Magnetic Lock

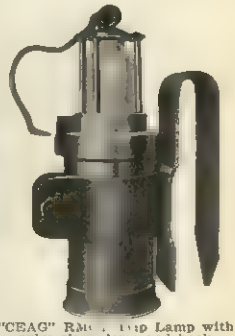
We Guarantee Lower Cost of Maintenance Per Lamp Shift Than Any Other Electric Safety Mina Lamp



"CEAG" RM[illegible] Lamp
All Metal Dry Electrolyte Lamp

"CEAG" RM-6 Cap Lamp

There Are More "CEAG" Electric Safety Lamps in Use Throughout the World Than All Other Makes Combined



"CEAG" RM[illegible] Trip Lamp with ruby glass dome and hook for attaching to mine car
All Metal Dry Electrolyte Lamp

The specially designed electrodes for use of our solidified electrolyte require no separators and there can be no buckling of plates. Our solidified electrolyte absolutely prevents corrosion of terminals and leakage, which so frequently causes injury to the clothing or person of the user of liquid electrolyte lamps. The solidified electrolyte maintains a complete contact with the electrodes resulting in a constant uniform light regardless of the position of the battery.

"CEAG" lamps can be completely assembled and disassembled and all repairs made by your own lamp man at the mine, thereby saving the cost and trouble of having to send batteries to the factory for repairs.

Installations on Rental Contract or Outright Sale.

Write For Catalogue.

"CEAG" Locomotive Headlight LN-I (Front View)

"CEAG" Inspector's Lamp GM (all brass)

"CEAG" Inspector's Lamp MS with Reflector attachment (all brass)

"CEAG" Mule Lamp MU with Leather straps to be attached to the collar of the mule

"CEAG" Locomotive Headlight LN-I (Side View)

"CEAG" Watchman's Lamp W

KOEHLER MFG. COMPANY, INC.

Factory and Main Office
MARLBORO, MASS., U S A

BRANCH OFFICES
1634 Jefferson Avenue, Scranton, Pa. 530 Fernando Street, Pittsburgh, Pa.

Wheat Electric Mine Lamp

"WHEAT" FOR LIGHT "KOEHLER" FOR TESTING

The Important Features

Two Bulbs in Headpiece—A bulb always in reserve. Eliminates lost time and accidents through being "left in the dark."

More Lighting Power—The bulb gives a clear white light and will burn from 12 to 16 hours on one charge.

Weight—Minimum weight for maximum light of any lamp in its class.

U. S. Bureau of Mines Approval No. 17

Headpiece Always Sealed—The headpiece is provided with a locking and sealing device which prevents its being tampered with, and keeps out dirt and can be quickly opened or sealed by the lamp attendant.

Absolutely Safe—Should the lighted bulb be broken its electric current is instantly and automatically disconnected.

Lamp Burns with Battery in Any Position—The battery casing is so constructed that it can be carried in any position without leakage, or affecting the lighting capacity of the bulb.

Easy Charging—The Wheat Electric Mine Lamp does not have to be taken apart for charging, but goes into the charging rack completely assembled.

Durability—The headpiece and battery casings are made of a special vulcanized material that is as strong and light as cast aluminum, and is absolutely unaffected by acid fumes or water.

Lamp Cord Cannot Bend Short—An improved cord connection, without springs, prevents short bending and breakage at entrance to battery case—gives greater security and longer life to lamp cords.

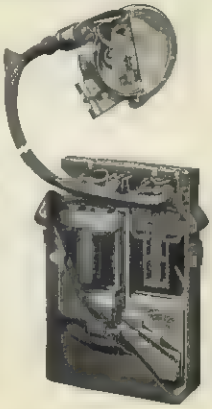
Greater Comfort to Wearer—The two belt connections to the battery case are as far apart as possible, thus greatly increasing the wearer's comfort.

Superior Construction—All parts are specially designed for convenient removal and assembling. This saves time and labor, and insures perfect condition of lamps at all times.

Layout of Lamp House

Repairs

All replacements and repairs on this lamp can be made in your lamphouse by your lampmen. This advantage is recognized by all our users.



Koehler Flame Safety Lamp

U. S. Bureau of Mines Approval No. 201.

The ideal lamp in testing for gas.

Made in steel, brass and aluminum, either magnetic or key lock, with round or flat wick.

Ask for Catalog and Price Lists

"HERE'S *the* RECEIVER FOR YOU"

Crosley Trirdyn 3R3
$65.00

The Trirdyn 3R3 incorporates radio frequency amplification, regeneration, reflex and additional audio frequency amplification. With only three tubes it will give better performance than the customary four and five tube sets. It easily tunes through local broadcasting to bring in long distant stations on the loud speaker.

Other Crosleys from
$14.50 to $120.00

Prices quoted are without accessories

All Crosley Regenerative Receivers Licensed under Armstrong U. S. Patent 1,113,149

The dealer who enjoys a Crosley Franchise will, many times a day, repeat that phrase. Wide publicity and continued satisfactory performance have made Crosley Radio Receivers the largest and easiest sellers on the market. If you handle Crosleys every prospect can be quickly converted into a purchaser.

Decide today to standardize on this Complete Line. For Sale By Good Jobbers Everywhere.

CROSLEY
Better-Cost Less
Radio Products

Write for Catalog

THE CROSLEY RADIO CORPORATION

Powell Crosley, Jr., *President*

948 Alfred St. **Cincinnati, O.**

The Crosley Radio Corporation Owns and Operates Broadcasting Station WLW

THE IDEAL LINE For Every Hardware Dealer

As the years go radio is a new industry. But, it is now old enough to have proven itself a stable industry—one that is filling a definite need and will continue to fill that need through the years to come.

Far seeing Hardware Dealers have recognized this fact. They know that radio receivers are a natural addition to their present established business, greatly increasing their profits without any material increase in overhead expense.

The Crosley line of Radio Receivers has shown itself to be ideal for the Hardware Dealer. The wide variety of instruments contained in it, the great demand for these instruments created through actual performance and consistent national advertising and the quick, easy sales have helped many a Hardware Dealer to greater profits and a more stable business.

You, too, will find among the Crosley Radio Receivers shown here, an instrument to suit the desires, tastes and pocket books of everyone of your present customers, and the many more that will come to you because you handle Crosley's.

CROSLEY MODEL 51—$18.50

There is our newest receiver the Crosley Model 51. A two tube Armstrong Regenerative set, illustrated above. Licensed under the Armstrong U. S. Patent No. 1,113,149. It is indeed a triumph in radio engineering. Although it consists of detector and one stage of audio-frequency amplification it sells at the very low price of $18.50.

CROSLEY TYPE V—$16.00

A one tube regenerative set. Licensed under the Armstrong U. S. Patent No. 1,113,149.

CROSLEY TYPE 3-B—$42.00

This three tube regenerative receiver licensed under Armstrong U. S. Patent No. 1,113,149 combines the Crosley Type V. single tube receiver, and the Crosley two-stage amplifier.

Write for Complete Information of the Crosley line of Radio Receivers and Parts.

Crosley Type V $16.00

Crosley Type 3 B $42.00

For Sale by Good Jobbers Everywhere

The Crosley Radio Corporation

POWEL CROSLEY, JR., President
Formerly The Precision Equipment Company and Crosley Manufacturing Company

448 Alfred Street Cincinnati, Ohio

CROSLEY
Better—Cost Less
Radio Products

Say you saw it in GOOD HARDWARE

OUTLOOK AUTO MIRRORS

Designed to attach to the interior of open or closed cars. Fastens to the frame of the windshield, by means of two small holes being bored in the frame, and furnishes a Clear vision through rear window. The Bevel edge mirror is clear, flawless and backed with silver. Instantly adjusted to any position without set screws, and is held firmly in place by the permanent tension of the nickel-plated holder.

Outlook Auto Mirrors.....Each, $3.50

Packed Each in a Separate Box.

KEYLESS AUTO CLOCKS

No. 9.

Rim Wind—Rim Set

Eight Day.

Black and Nickel Trimmings

No. 9 —2¾ inch Dial.....Each, $12.40

No. 12B—2¼ inch Dial.....Each, 11.50

Packed—One in a Box.

No. 12B.

KEYLESS AUTO CLOCK

No. M. Jr.

Rim Wind—Rim Set

Eight Day.

Black and Nickel Trimmings.

No. M. Jr.—2¼ inch Dial. The Best Clock for small cars.....Each, $11.00

Packed One in a Po

KEY WIND AUTO CLOCKS

Key Wind

Eight Day.

Denver Cowl—Black and Nickel Trimmings, 2¾ inch Dial.....Each, $7.50

Packed—One in a Box.

Denver Cowl.

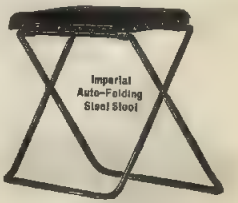
AUTO FOLDING STEEL CHAIRS AND STOOLS

No. 213

Oval Steel Frames, Black Japan Finish, seat and back rest padded with felt and upholstered in black water-proof art leather. Built for strength and safety as well as for convenience and comfort.

Child's size. Height of seat 12 inches; Seat, 9x12 inches. Back, 10½x3½ inches; Folded size, 11x16x2 inches. Weight per dozen, 100 lbs.

No. 213—Auto Folding Steel Chairs..Per Dozen, $34.00



No. 212

This Stool is especially adapted for jitney cars. Can be set up in a second. When folded it takes up very little space. Seat is padded with felt and upholstered in black waterproof art leather. Frame is made of best oval steel and finished in rich black Japan. This stool enables jitney owners to carry an extra passenger without crowding.

Adult Size. Seat, 11x12 inches, Height, 16 inches. Folded, 12½x19x2 inches.

No. 212—Auto Folding Steel Stools...Per Dozen, $32.00

KLAXON AUTO HORNS

Klaxon 12-A.

The Klaxon 12-A—Has a deep, powerful, unmistakable note nearly matching the note of the Klaxon 20-L. The low price is due to a simplified construction requiring less labor and material. Furnished with motor or universal underhood bracket. Black finish only.

No. 12A- 6— 6 Volt with Motor Bracket..Each, $10.00
No. 12A- 7— 6 Volt with Dash Bracket..Each, 10.00
No. 12A-12—12 Volt with Motor Bracket..Each, 10.00

Klaxon 20-L.

In warning power, dependability, workmanship and finish the Klaxon 20-L has no equal. It is built for the motorist who will accept only the best and is especially suitable for outside mounting on large cars and sport models. Furnished with universal bracket or with a special Cadillac bracket.

No. 20-L—6 Volt with Regular Bracket...Each, $30.00
No. 20-Cad.—6 Volt with Cadillac Bracket..Each, 30.00
No. 20-S—6 Volt, same as 20-L, but with Short projector .....Each, 30.00
No. 20-Deck—6 Volt, same as 20-L, but with demountable Swivel Bracket for use on running board or on Motor Boat Deck....Each, 33.00

Klaxon 3-V.

A hand Klaxon with a vertical push rod. Being as carefully made as the electric Klaxons, it has the genuine, powerful Klaxon note. Furnished with a universal bracket for installation on open cars. Either left or right-hand truck bracket can also be furnished.

No. K3V—With Vertical Push Rod..... Each, $5.00
No. K3H—With Horizontal Push Rod.....Each, 5.00

Klaxon 3-MC.

This is a hand operated Klaxon similar to the Klaxon-3 but furnished with a short projector for use on motorcycles. Handlebar, frame or tank brackets for all makes of motorcycles are furnished.

No. K3H-MC—With Horizontal Push Rod .Each, $4.75
No. K3V-MC—With Vertical Push Rod.. .Each, 4.75

DISPLAY STANDS

A real sales-help. Beautifully finished in mahogany and gold; wired for two instruments and for connecting to battery so that your customers can actually hear the Klaxon note of warning.

If you have ordered Klaxon instruments to the amount of $50 list you are entitled to one of them. Stand designed to hold one Klaxon 5 and one Klaxon 12-A.

Klaxon 8.

Klaxon 8—A new ball bearing model, built on the same principles as its big brother, the Klaxon 12-A. It's a sturdy dependable horn that fully answers the need for both city and country driving. Comes with either universal or motor mounting. Black finish only.

No. 806— 6 Volt with Motor Bracket.....Each, $7.50
No. 807— 6 Volt with Dash Bracket.....Each, 7.50
No. 812—12 Volt with Motor Bracket.....Each, 7.50

Klaxon 5 Ford.

A small but surprisingly powerful Klaxon especially designed for use on Ford cars equipped with self starters. Although its price is low the signal is genuine Klaxon quality throughout. It will give dependable protection for the entire life of the car with practically no attention. Black finish only.

No. 5F6 — 6 Volt for Ford Cars.....Each, $5.50
No. 506 — 6 Volt with Motor Bracket...Each, 5.50
No. 507 — 6 Volt with Dash Bracket....Each, 5.50
No. 5D12—12 Volt for Dodge Cars.....Each, 5.50

Klaxon 16.

A signal especially designed for use on the "Cadillac 61"—under the hood. Compact, powerful, sturdy, it is uniquely fitted to protect the safety of the occupants and to safe-guard the owner's investment in so fine a car. Black finish only.

No. K16—Cadillac .....Each, $25.00

Klaxon 6-MC.

A Klaxon 6 with a short projector for use on motorcycles. Its powerful, shrill note gets instant attention. Its sturdy construction enables it to withstand the severest jarring. Furnished with handle bar, frame or tank brackets for all motorcycles. Finished in black only.

No. K6-MC—Motorcycle .....Each, $7.75

EXTRA.

Klaxons are regularly finished in black baked enamel. For special finishes such as black-and-brass, black-and-nickel, etc., add $1.00 to the list price. Electric Klaxons are operated either from dry cells or storage batteries. They are regularly wound for six volts. For special voltages up to 21 volts no extra charge is made.

NOTE.

Push buttons and wires are furnished only with Klaxon 20 instruments. Extra for Klaxon 12 models, $1.00 List; for Klaxon 5 and 6 models, $0.75 List.

12-A can only be furnished in 6V and 12V.

Ormolu Gold Plated Clocks

Ormolu Clock, gold finish, embossed design, fitted with 2-inch movement, silver dial, height 5¼ inches, width 3⅝ inches.

No. 60W148. Each.... **2.25**

Ormolu Gold Plated Clock, with embossed Dutch figures, fitted with a 32-hour American movement, height 6 inches, width 6½ inches highly finished. An accurate timepiece.

No. 60W149. Each..... **2.15**

Ormolu Gold Plated Clock, Colonial design, fancy raised embossed ornamentation on all sides, rustic scenes, 32-hour movement, height 6¼ inches

No. 60W146. Each.... **2.25**

Ormolu Gold Plated Clock. Colonial design, fitted with a 24-hour movement, silver dial, height 4⅝ inches, width 3⅜ inches. A very attractive number.

No. 60W147. Each.... **2.35**

Desk Clock, nickel finish perpetual calendar, 32-hour lever time movement, 2-inch dial, height 5¼ in., width 3⅜ in. easel back.

No. 60W139. Each..... **1.85**

Ormolu Gold Plated Clock, embossed Cupid design, height 9 inches fitted with an American 2-inch 32-hour movement. An accurate timepiece.

No. 60W150. Each.... **2.50**

Colonial Clock. Metal case, popular tambour shape, length of base 7½ inches, metal case in Colonial design in Roman gold finish, 32-hour lever time movement, 2-inch white dial with fancy Arabic figures. Very popular style and an excellent timekeeper.

No. 60W43. Each..... **2.50**

Desk and Paper Clip Novelty Clock, mat gold finish, length 4½ in., width 3½ in., perpetual calendar, made as a paper clip equipped with good strong springs. Can be used flat on a desk or hung on a wall. 30 hour lever time movement, 2 in. white dial. A decidedly handy and unique clock that will appeal to everyone.

No. 60W174. Each.... **1.35**

Celluloid Ivory Clocks

Illus. 60W126 - 60W128. Celluloid Ivory Clocks. Fancy curved top, white celluloid footed fronts, fitted with a 24 hour movement, blue steel hands. Regular setter and wind key in the back.

Each 1.35

No. 60W137. Octagon Shape Clock. White celluloid ivory grain, gilt hands, height 3¼ in., width 3¼ in.

Each 1.50

No. 60W241. Celluloid Ivory Clock, octagon shape on a stand, fitted with a one day time movement.

Each 1.65

No. 60W135. Celluloid Ivory Clock, oval shape, carved embossed design with ball feet, fitted with a 24-hour, one day time movement entirely new and a good seller.

Each 1.75

No. 60W129. Celluloid Ivory Clock. Pointed Gothic design with fancy shape base, width of base 3⅞ in. height 4 in., 24-hour movement, 2-inch dial.

Each 1.50

No. 60W138. Celluloid Ivory Clock. Fancy oval top and base, supported by taree pillars on each side, height 3½ in., width 4¼ in., 24-hour movement, gilt hands. A very attractive number.

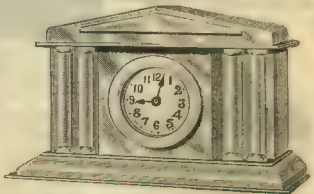
Each 1.85

Dice Clock. Made of composition with number of dice on the outside, fitted with a 24-hour movement, gilt hands, height 2⅞ in., width 2⅞ in. A ready seller for premium purposes.

No. 60W154. Each 1.40

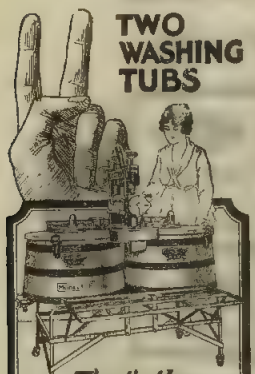
No. 60W215. Extra Heavy Celluloid Ivory, Tambour Shape, Boudoir Clock, with fancy colored celluloid rim in blue, green and rose colors. 3⅝ inches long, 5 inches high, fitted with a one-day American made guaranteed movement. Something entirely new in celluloid clocks.

Each 2.45



No. 60W131. The Famous White House Clock. White ivory (celluloid) case, fitted with a good reliable American movement, good timekeeper, height 4¾ in., base 3 in. A big seller and an excellent gift that satisfies.

Each 2.00

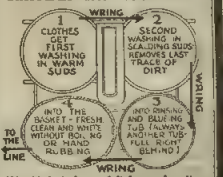


TWO WASHING TUBS

That's the Secret of Quick Washing with a **DEXTER** *Double Tub*

WASHING routed straight through from hamper to line in 1-2-3-4 order — not an instant's delay—not a single backward move—complete equipment on one sturdy steel frame.

There is no "lost motion" here:


WRING
1
CLOTHES GET FIRST WASHING IN WARM SUDS
2
SECOND WASHING IN SCALDING SUDS REMOVES LAST TRACE OF DIRT
WRING
3
INTO THE BASKET - FRESH CLEAN AND WHITE WITHOUT ROLLING OR HANDLING
INTO RINSING AND BLUEING TUB (ALWAYS ANOTHER TUB FULL RIGHT BEHIND)
TO THE LINE
WRING

Wouldn't it be a delight to handle your washings that way!—to wash, rinse and wring by power, all at the same time?—to do a three-hour washing in only one hour with this compact, double-duty washer?

Come in to see the Dexter Double Tub. We'll gladly demonstrate it. No obligation.

(Dealer's Name Here)

Newspaper Ad No. 7—1 col x 8 in

THREE HOUSEHOLD HELPS FOR EVERY HOME

The great nation wide movement to prevent waste has been started by frugal, patriotic American Housewives. Do your part on this work by using the three household helps in your home.

UNIVERSAL Bread Maker

UNIVERSAL Food Chopper Turns left over pieces of meat, vegetables, fruit etc., into dainty and appetizing dishes. Soon saves its cost in what it saves.

UNIVERSAL Bread Maker Saves flour and makes light, wholesome bread without trouble or waste. Does the mixing and kneading in three minutes.

UNIVERSAL Percolators Saves you one third on your coffee bill because the full flavor and aroma are extracted from each grain of coffee.

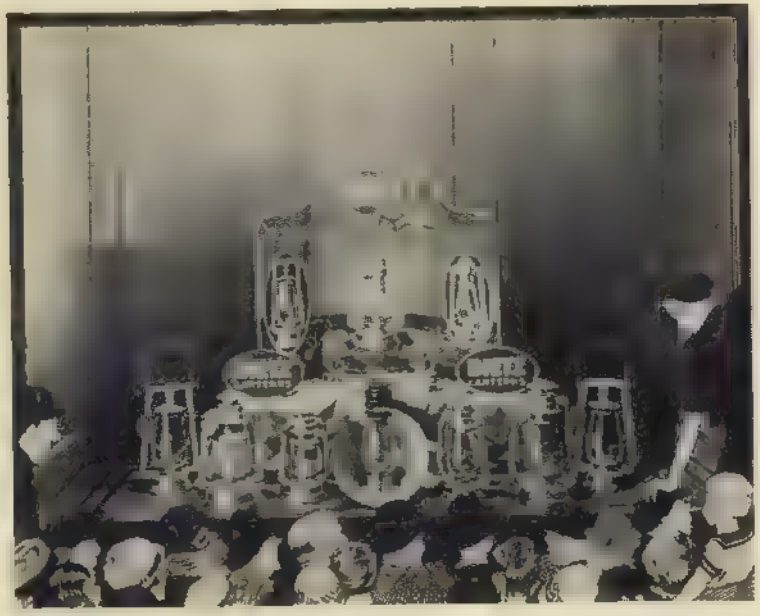
Dealer's Name Here

UNIVERSAL Coffee Percolator

UNIVERSAL Food Chopper

Universal No. 1.

Newspaper Ad No. 7—1 col. x 8 in.



Send for Dietz New WINDOW DISPLAY!

—*It Sells Lanterns*—

DARKNESS falls earlier in September. Every Camper, Hiker and Hunter enjoying a holiday during that month has special need for a good Dietz lantern. Every Motorist on a camping tour should also have a suitable lantern along.

A good window display of Dietz Lanterns NOW will remind country-bound vacationists that they need lanterns and sell many that might otherwise not be sold at all.

Dietz New Window Display will swell your early Fall Sales of Lanterns. Please use the Coupon below!

R. E. DIETZ COMPANY, NEW YORK

LARGEST MAKERS OF LANTERNS IN THE WORLD FOUNDED 1840
OUTPUT DISTRIBUTED EXCLUSIVELY THROUGH THE JOBBING TRADE

Cut out the coupon and mail before you forget it

R. E. DIETZ COMPANY, 60 LAIGHT STREET NEW YORK
Please send us Without Charge One Dietz Window Display

Name ..... Address

My Jobber is..... Address

LIGHTS AND LAMPS

DRIVING LAMPS

Dietz Union.

Plain Lens. **Optical Lens.**

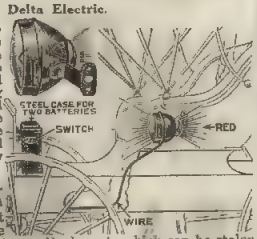
Black enamel, brass door rim, right and left hand sockets, plain lens or optical lens, dash clamp holder.

Dietz Union driving lamps are made of cold rolled steel, are cold blast in principle, will not jar or blow out. All parts, including non-tarnishing aluminum reflector, are removable. A lip spring permits their use as a dash clamp. Height over all 11¼ inches; ⅝-inch wick, for 150° kerosene, fount capacity 10 hours; No. 0 union nickel-plated brass burner; 5⅛-inch front lens, 2¼-inch rear ruby lens.

Plain Lens—Reflected candle power 30. Per doz. . $75.00
Optical lens—Reflected candle power 70. Doz. . . . 85.00

SEARCHLIGHTS

Delta Electric.



In addition to complying with the law, drivers of horse drawn vehicles are being convinced that trudging along a dark, narrow and crooked road in the dark makes the use of a suitable signal light absolutely necessary.

Headlight—Three inches in diameter drawn out of heavy gauge sheet steel. No parts or attachments which can be stolen from lamp. Throws powerful light ahead and has a red lens in rear, 1½ inches in diameter; handsomely finished in baked black enamel.

Headlight bracket—Made of heavy strip steel which will not break like a casting.

Battery case—Substantially made of heavy sheet steel handsomely finished in high-grade baked black enamel. Attaches to dash of buggy or can be bolted to the floor beneath the seat. Holds two batteries.

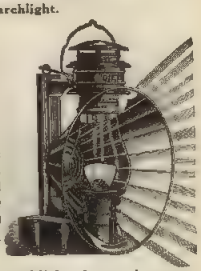
Switch—Located on the battery case, made of spring metal insuring good connections.

Wire—Ten feet of double wire is supplied with every lamp.

No. 32—Wt., ea., 2¾ lbs. Each (without batteries) $2.50
One complete system in two cartons.

WALL LANTERNS

Dietz Searchlight.



‡**No. 30**—**Dietz tubular** searchlight, green enamel finish, burns kerosene. Cold blast principle, will stand strongest winds and is equally good for indoor use. 15¼ inches high, gives reflected light of 50 candle power. Takes 1-inch wick, Blizzard globe. Burns 35 hours. Per dozen $55.00
Weight, per box, 25 pounds.
Three in a box.

‡**No. 60**—**Dietz tubular** searchlight burns kerosene, green enamel finish, cold blast, will stand strongest wind, No. 3 burner, 1⅛-inch wick, No. 2 street globe and bright tin reflector. 20½ inches high, gives reflected light of 100 candle powre. Burns 30 hours. Each $12.00
Weight per box, 25 pounds.
One in a box.

LAMPS

HANGING

Globe Tubular.

No. 03—Globe tubular hanging lamps, 21½ inches high, to burn a given number of hours, with automatic extinguisher, No. 3 burner, 1½-inch wick, No. 3 globe. Each.....$12.00

STREET

Globe Tubular.

No. 3—26 inches high, to burn a given number of hours with automatic extinguisher, No. 3 burner, 1½-inch wick, No. 3 globe. Each $11.00

Crystal Tubular.

No. 30—26 inches high, to burn a given number of hours, with automatic extinguisher, No. 3 burner, 1½-inch wick, No. 3 globe, glass fount. Each.....$14.00

No. 3F founts and burners—For No. 3 globe street or No. 03 globe hanging lamps. Each.....$4.00

No. 30F founts and burners—For No. 30 crystal street lamps. Each 4.00

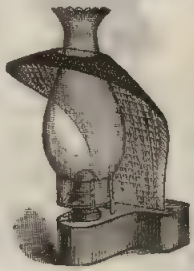
All above, one in a case.

SIDE

Radiant.

No. 11—Radiant, Japanned with glass fount complete with 7½-inch corrugated tin reflector, No. 2 burner and sun chimney. Per dozen $10.00

One dozen in a case.



Climax.

No. 12—Climax, Japanned fount, fancy tin reflector, No. 2 burner, and sun chimney. Per dozen $20.00

One dozen in a case.

BRACKET

Complete, with bronzed ring bracket, glass fount with outside filler, 7-inch silvered glass reflector, No. 2 burner and wick (with chimney.)

No. 069—Weight, per dozen, 35 pounds. Per dozen ..$25.00

No. 071—Complete, with bronzed bowl bracket, No. 20 glass fount with outside filler and handle, 8-inch silvered glass reflector, No. 2 burner and wick (with chimney). Dozen...$30.00

No. 071-10 — Same as 071, but with No. 10 fount. Per dozen... 28.00

Weight, per dozen, 38 pounds,

Open stock—Loose.

Sales Helps To Boost Your Business In

DISSTON

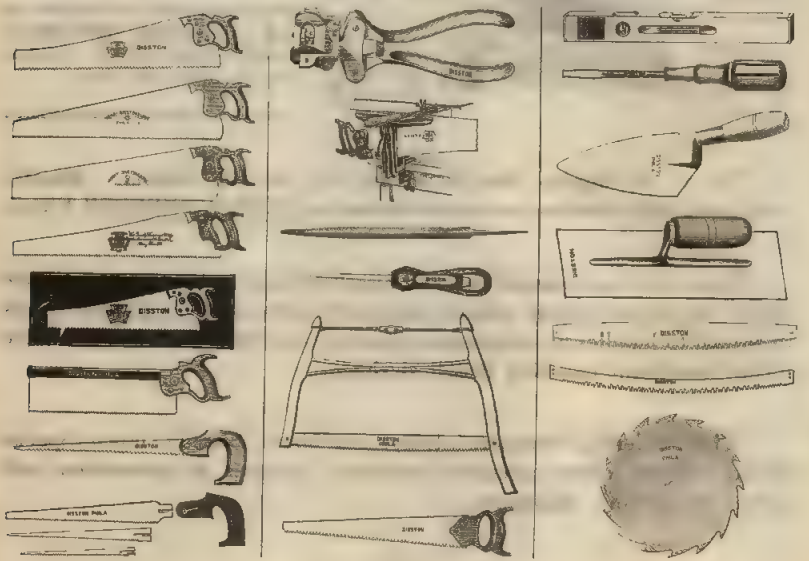
SAWS TOOLS FILES

The items listed on this and the next two pages are distributed to dealers, all no charge, by Henry Disston & Sons, Inc All you need to do to get cuts, booklets, window displays, or folders from Disston is ask for them.

You may either write direct to the Disston Offices in Philadelphia or tell our salesman about your wants The result will be the same. You will receive a real assortment of display matter, books to build friends for your store, or cuts to use in your advertising There are even complete advertisements showing both illustrations and copy.

Electrotypes of Tools

Any of the electrotypes of tools shown on this page can be had immediately in 2-inch widths, as shown, or in 1-inch widths. These may be used in newspaper advertisements or to illustrate folders and direct-mail literature.



Bissell's Twin Display

An Attractive Display Feature

WHEN LEAVES IN COLOR GLOW IT'S INDOORS WE MUST GO
Let us supply some of your fall needs for Home Comforts Conveniences and Cleanliness
Autumn
Suggestions
BISSELL'S MAKES CLEANING AMAZING EASY IT SAVES TIME
"Put your Sweeping Balance on a BISSELL Appliance"

Bissell's Twin Display

Free with factory shipment of a dozen or more sweepers. It is a lithographed "CUT-OUT in nine colors on heavy cardboard, size about 4 1-2x6 inches. Fine for Fall, convertable for Xmas. The show windows are the eyes of the store. Make them wink the attention of a passerby. MAKE THEM SMILE. MAKE THEM INVITE. A nicely dressed window does this.

This is the display that is current for the full season. Bissell's Fall.Xmas offer enables you to get this and an EXTRA SWEEPER FREE.

Cooperative newspaper cuts and Bissell sweeper cuts (*ASK FOR PROOF SHEET TO SELECT FROM*) picture slides, attractive store cards price cards to attach to handles of sweepers on display, and folders always available to any merchant handling Bissell sweepers.

When ordering Sweepers always ask about Bissell's latest Special Offer. These offers present attractive features in connection with dozen lot factory shipments.

Exploitation Ideas

Showmen Publicity Schemes That Build Up Big Audiences

HUNDREDS of merchants window tie-ups, in all sections of the city were arranged in connection with the New York showing of *"Babbitt,"* the Warner Brothers classic of the screen, from the novel of Sinclair Lewis of the same name. This co-operative advertising campaign included windows attractively dressed with signs, pictures of the stars in the picture and articles of merchandise, including books, jewelry, automobiles, sporting goods, clothing, shoes, radio sets, and perfumes.

The Studebaker automobile agencies on Broadway gave their entire windows for life size cut-outs of Carmel Myers and Willard Louis tying up with their cars. These two windows were so attractively dressed with the new Twin Six touring car and stills from the picture that all during the day people gathered in crowds before them.

The windows of six Liggetts Drug stores, on the most congested corners of the city, all displayed illustrated copies of *"Babbitt"* with a number of pictures from the production

Of all the stores that co-operated in this extensive tie-up particular mention must be made of Studebaker Motors, Ligget Davegas sport shop, Wurlitzer music stores, Landay's, Gray's drug store, Trivers clothing shop, Russek's Millinery, Capitol jewelry, Gibraltar baggage, Gropper baggage, Palais Royal Shop, Coin De Paris, Inc., Rova Radio Shop, Radio Shaks, and the Liberty Radio Corporation. In addition, some 90 or more windows carried signs and pictures mentioning the Rivoli theatre.

* * *

MORE SUMMONSES

"Smiling Jimmy" Powers, manager of the Bijou at New Haven, framed a "summons," bearing a red seal and rather legal-looking type, and used it as a herald to put over Paramount's *"Bluff."* He served the "summons" on hundreds of automobiles parked downtown, then stood back and watched the expression of the drivers when they read it

Jim Flynn and Pat Malloy, two of the city's best traffic officers, finally picked up one of the summons and hastened down to the Bijou and begged the manager to let them serve them. They performed the job in a very dignified manner and got a laugh every time. They were really helping Powers to put it over, without realizing the fact.

It was particularly noticed however that none of those receiving the summons threw it away but placed it in his pocket with the apparent intention of serving it on someone else; and so an endless chain was forged.

* * *

POSTAL TIE-UP

Uncle Sam is contributing to the vast exploitation campaign which Vitagraph is now planning for *"Captain Blood,"* the picturization of Rafael Sabatini's novel.

The government has just issued a new one cent stamp in honor of the Huguenot-Walloon Tercentenary, which marks the landing of these new world adventurers on American soil in 1624

The government engraving shows one of the 17th century galleons similar to that used by the buccaneers of the Spanish Main and which Captain Blood commanded as the flagship of his pirate fleet. Vitagraph purchased a million one cent stamps and is using them on all mail dealing with this picture.

* * *

EXPLOITATION BOOKLET

First National Pictures, Inc., has just issued a forty-one page booklet on special advance exploitation for *"The Sea Hawk."* It contains exploitation material which the exhibitor will find of great value in getting the picture properly before his public.

Many of the ideas and stunts contained in the booklet have been tried out and found successful in *"The Sea Hawk"* showings. Hundreds of others are new and are offered as suggestions that lend themselves to local adaptation.

All phases of exploitation are considered in the booklet so that the exhibitor in the small town and the large city alike may find what he needs. Most of the stunts outlined are inexpensive. Some of them will necessitate a little expenditure but the results are worth while

Exhibitors showing *"The Sea Hawk"* should pay especial attention to the tie-ups with various nationally advertised products which are listed in the booklet and to the commercial tie up possibilities of a long list of stills. The street ballyhoos and the ideas advanced for the decoration of the lobby form a valuable part of the book

There are ways and ways to exploit pictures through tie-ups. This shows one effective manner of selling books and tickets to photoplays. The display made hosts of patrons for United Artists' "Dorothy Vernon of Haddon Hall."

DOUBLEDAY-HILL ELECTRIC CO.

Manufacturing and Repair Department

719-21 Liberty Ave., PITTSBURGH, PA.

Specialists on Mine Electrical Equipment

Products

Armature and Field Coils, Commutators, Shafting, Magnets, Etc.

We have been operating a complete manufacturing and repair department for over twenty years, where we manufacture armature and field coils, rewind armatures, reinsulate burned out field coils at about half the cost of new ones. We also repair all kinds of electrical equipment.

Our men are experienced in all classes of this work and we guarantee every job to be in A-1 condition when shipped. We also send men out on big jobs when it is not practical to send in to shop.

View of Our Coil Winding Department

View of Our Coil Taping Department

Our Impregnating System for coils and winding jobs gives an added insulation well worth your consideration.

Burned Out Field Coils

Do not scrap your old coils if made of No. 6 wire or larger or of strap copper. We reinsulate the old wire with new insulation and impregnate (not dip) the coils with black plastic varnish.

Give us a trial when next you have anything in our line.

Your inquiries respectfully solicited.

DUDLEY ELECTRIC & MACHINE CO.

Main Office and Shop
309 E. Main Street, UNIONTOWN, PA.
Phones: Bell 402; Tri-State 540

Branch
BROWNSVILLE, PA.—Bell Phone 493

Electrical and Mechanical Repairs and Supplies

Products

We furnish and install Power Plants, Motors, M. G. Sets, Fans, Pumps, Hoists, Sub Stations and Line Materials.

We Manufacture Armature and Field Coils, Armature Shafts, Commutators, Brass Castings, Special Machinery and Repair Parts for all Classes of Mining Machinery.

We Wind Armatures, Fields, A. C. Motors and Coils for all purposes.

We Repair Boilers, Engines, Air Compressors, Pumps, Electrical Apparatus and Machinery of all kinds.

Cylinder Boring. We maintain a force of experts for reboring Engine and Air Compressor Cylinders, our facilities for handling this class of work are unexcelled.

Used Machinery Honestly Rebuilt

We buy, sell or exchange second hand Electrical Machinery. If you have any machines which are not in use let us help you to dispose of them, and if you are in the market we can no doubt make you an attractive proposition on your requirements from our List of Honestly Rebuilt Equipment.

Our Organization

is composed of men who are experts in their particular lines. It has always been the policy of this Company to secure and retain at any cost men whose experience in and about electrically operated mines render them especially capable of handling this class of work.

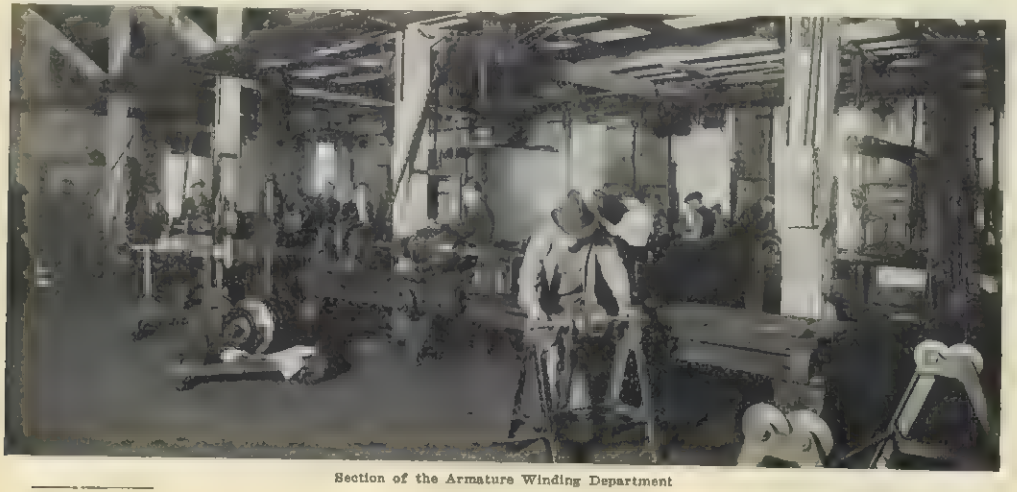
Policy and Service

Our policy is to stand back of our work, seeing it gives satisfactory service, although it may involve going beyond the terms of our liberal guarantee. Realizing the seriousness of delays to mining operation caused by burn-outs, we are prepared to work night and day on emergency jobs and our large stock of Coils, Commutators, Wire, etc., enables us to take the best of care of such emergencies.

Equipment

We maintain a complete Electrical Repair Department, including a modern Machine Shop, Blacksmith Shop, Acetylene Welding Apparatus, Air Compressor and Air Tools, Brass Foundry and Hydraulic Press. Our Coil Department is equipped with the latest and most complete equipment for the manufacturing of Armature and Field Coils. Our methods of testing, treating and baking electrical apparatus are best calculated to prolong the life and increase the efficiency of such apparatus when operating in damp, dusty and greasy places, and when subject to the severe duty often met with in mining operations.

We solicit your inquiries, welcome suggestions, invite criticism, and assure you that any and all correspondence will receive prompt and courteous attention.



Section of the Armature Winding Department

Hear, Hear!

Douglas MacLean
in "Never Say Die"

held over—tremendous hit!

WESTERN UNION TELEGRAM

NEWCOMB CARLTON, PRESIDENT — GEORGE W. E. ATKINS, FIRST VICE-PRESIDENT

CLASS OF SERVICE | SYMBOL
Day Message | —
Day Letter | —
Night Message | NM
Night Letter | NL

Form 1201

CLASS OF SERVICE | SYMBOL
Day Message | —
Day Letter | —
Night Message | Blue
Night Letter | Blue

RECEIVED AT
SB439 68 NL

1924 AUG 12 AM 2 58

J S WOODY
LOS ANGELES CALIF 11
35 WEST 45TH ST NEW YORK NY

OWING TO TREMENDOUS HIT "NEVER SAY DIE" HELD OVER
TERRIFIC HEAT BUSINESS CONTINUES SAME AS FIRST WEEK IN SPITE OF
CONTINUE RUN INDEFINITELY BUT OWING TO PREVIOUS BOOKINGS MUST MOVE WILL
TO MILLER'S THEATRE NEXT WEEK
PICTURE EVERYBODY SAYS MACLEAN'S BEST
SEASON "NEVER SAY DIE" IS ONE OF REAL SUCCESSES OF ANY

CHARLES H WUERZ
Managing Director, California Theatre.

RELEASE DATE
AUG. 30TH.

"Never Say Die"
is Mac Lean's greatest audience picture from William Collier's greatest stage success.

Everybody says Mac Lean's best picture

Encore Pictures

ASSOCIATED EXHIBITORS

ARTHUR S. KANE PRESIDENT

PHYSICAL DISTRIBUTOR
PATHÉ EXCHANGE · INC.

FOREIGN REPRESENTATIVE
SIDNEY GARRETT

Published weekly by Exhibitors Review Publishing Corporation. Executive, Editorial Offices 45 West 45th St., New York City. Subscription $2.00 year. Entered as second-class matter, Aug. 25, 1922, at postoffice at East Stroudsburg, Pa., under act of March 3, 1879.

DYNAMITE

NOTE—In ordering Dynamite always specify size of stick; ⅞x8 in. is generally used for hand drills and 1¼x8 in. is generally used for machine drilling.

DU PONT NITRO-GLYCERINE

Not Low Freezing. For Open Work. Resists Water Well.

⅞x8-in. and 1¼x8-in. Sticks.

Strength	25%	30%	33%	40%	50%	60%
Per 100 lbs.	$					

Packed regularly 50 pounds in a box. See extra charge for 10 and 25 pound boxes.

DU PONT GELATINE

Not Low Freezing. For Close Work. Resists Water Well.

⅞x8-in. and 1¼x8-in. Sticks.

Strength	35%	40%	50%	60%	75%	80%	90%
Per 100 lbs	$						

Packed regularly 50 pounds in a box. See extra charge for 10 and 25 pound boxes.

RED CROSS EXTRA

Low Freezing. For Close Work. Does NOT Resist Water.

⅞x8-in. and 1¼x8-in. Sticks.

Strength	20%	30%	33%	40%	50%	60%
Per 100 lbs.	$					

Packed regularly 50 pounds in a box. See extra charge for 10 and 25 pound boxes.

BLACK BLASTING POWDER

Grains. No.	F	FF	FFF
Per Keg (25 pounds)	$		

STUMPING POWDERS

Du Pont—20% strength—Low freezing, for dry holes, 85 to 90 sticks in 50 lb. box.

Pacific—20% strength—Non-Freezing, for wet or dry holes, in excess of 130 sticks to 50 lb box.

Du Pont—1¼x8 in. ..... Per lb. $.....

[illegible] ..... Per lb. $.....

GREASE

MICA AXLE

1-lb. Tin Cans, 4 dozen in a Case. Weight per Case, 58 lbs. ..... Per case, $7.50

1-lb. Tin Cans, 3 dozen in a Case. Weight per Case, 45 lbs. ..... Per case, $5 00

3-lb. Tin Cans, 2 dozen in a Case. Weight per Case, 85 lbs. ..... Per case, $10 50

10-lb. Tin Cans, 6 Cans in a Case. Weight per Case, 72 lbs. ..... Per case, $8.00

10-lb. Pails..... Per pail, $1.50

25-lb. Tubs..... Per tub, 3.00

ARCTIC CUP

Medium

No. 3—Capacity cans	5-Lb.	10-Lb.
Per pound	$0.14½	.14½

5-lb. cans, twelve in a case. 10-lb. cans as wanted

Medium Hard

No. 3½ Capacity cans	5-Lb.	10-Lb.
Per pound	$0.15	.15

5-lb. cans, twelve in a case. 10-lb. cans as wanted.

ZEROLENE CUP

No. 3½—Capacity cans	1-Lb.	5-Lb.	10-Lb.
Per pound	$0.20	.19	.18

1-lb., 36 in a case; 5-lb., 12 in a case; 10-lb., 6 in a case.

CARBIDE CAN

POCKET

No. 77—Capacity, 10 oz. Holds full day's supply. . Each, $0.15

CARBIDE

For use in welding, house lighting and miners' carbide lamps.

Quarter—1½ x ¼ in. ..... Per pound, $0.10
Nut—1¼ x ⅝ in. ..... " " .10
Egg—2x½ in. ..... " " .10
Lump—3½x2 in. ..... " " .10

In 100-lb. drums only.

2-lb. Cans—Pea size. ..... Per can, $0.30

Sold only in full case of 24 cans.

MINERS' CAPS

Sizes—6⅝, 6¾, 6⅞, 7, 7⅛, 7¼, 7⅜.

No. 234—Metal shield, brown canvas body. . .. Each. $0.35

BLASTING SUPPLIES

FUSE

Cotton, Warranted Waterproof

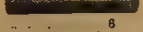
Triple Tape—Wt. per case, 117 lbs. ..... Per 1000 feet, $.....
Sequoia—Black cotton, wrapped. . Not as waterproof as triple tape ..... Per 1000 feet, $.....

Gutta Percha, Warranted Waterproof

Bear—Wt. per case, 120 lbs. ..... Per 1000 feet, $.....

6000 feet in a case and 3000 feet in a half case.

CAPS



Nos.	6	7	8
Per 100.	$ . .	$..	$ ..

100 in a tin box, 500, 1000, 2000, 3000 or 5000 in a case

BLASTING SUPPLIES

CAP CRIMPER

Blued Steel

No. 5—Length, 5½ in. Weight per dozen, 5 lbs. ..... Per dozen, $12.00

One-half dozen in a box.

CONNECTING WIRE

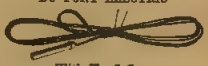
No. 21—Copper, on 1 and 2 lb. spools. ..... Per pound, $0 80

LEADING WIRE AND TAPE

Single Leading Wire—Copper, insulated. Per foot, $0.02
Duplex Leading Wire—Copper, insulated. . " " .02¼
Insulating Tape—½-lb. packages. . Each, 80

EXPLODERS

DU PONT ELECTRIC



With No. 6 Caps

Length, Feet	4	6	8	10
Per 100	$. .	.....	.....	..

Fifty in a box.

Furnished in lengths up to 20 ft. Longer lengths made to order

BLASTING BATTERIES

Push Down

Nos.	2	3	3A
Capacity, caps.	10	30	60
Gross weight, lbs.	20	30	28½
Net weight, lbs.	15	25	23
Each	$22.50	$0 00	35 00

The maximum capacity indicates the number of electric blasting caps the blasting machines will fire when using two posts and two leading wires. When three posts and three leading wires are used, the maximum capacity is increased 50 per cent.

No. 2 with two posts only.

Nos. 3 and 3A are 2-post, but can be furnished 3-post.

DU PONT POCKET BATTERY

Each $18.00

This Pocket Battery is for three holes. It has a brass case with rounded corners. Five inches high, three and one-half inches wide and two inches thick. Can be carried in the pocket.

GARAGE EQUIPMENT

ECO

AIR AND WATER STATIONS

This station contains a patented, enclosed spring operated reel running on Hyatt roller bearings carrying 32 feet of special "Eco" brand oil resisting air hose. Spring tension ample to automatically rewind hose immediately after using in uniform turns, thus having hose from exposure to weather and thereby giving longer life. This reel is geared direct to spring barrel and operates the rocker arm which automatically turns on or cuts off air in base of machine thereby leaving no pressure standing on hose and chuck when not in use. This provides a great saving in current bills as well as wear and tear on compressor. A handsome 200 pound gauge is provided on each machine which shows the tank pressure at all times. Has a handsome 24-inch light standard and globe. Tank pressure gauge immediately under light standard for easy reading after dark.

Specifications.

Stations are built of best gray iron finished in weather resisting red enamel. Spring tension adjustable on outside of machine. Station is furnished with air strainer and cut off valve. Standard finish red enamel. Other colors optional.

‡**No. 12**—Height, 5 feet, 5 inches; width, 25 inches; base, 14x22 inches. Shipping weight, 266 pounds. Each $115.00

‡**No. 10**—Same as above with low gauge housing in place of light standard. Height, 3 feet, 5 inches; shipping weight, 235 pounds. Each..... 105.00

Water Connection, additional $2.50

Coin Attachment, additional 10.00

Advertising can be painted on side of this machine at small additional cost. Two color glass enameled advertising disc can be furnished for $12.50 addtional; $5.00 for each additional color.

This station is a complete self-contained pumping and service unit, needing only a connection to an electric circuit and to the water system of any building.

This unit is designed for locations where there is a need for air service but where there is no source of compressed air at hand, or where the service required is not large enough to warrant the investment in a complete piping system, together with pumping unit, controller, tank, etc. The customer receives practically as good service as with any other type, but the garageman saves the loss due to leaky valves, pipe line and tank as well as the saving in initial investment.

Moving picture shows, amusement parks, vaudeville houses all offer a big field, as cars are driven up and left for a time before using again and often a flat tire is found when the car is started up.

Hotels, restaurants, country clubs and general stores on well traveled roads can add materially to their income by furnishing air service to touring parties.

Continued on following page

Items marked thus ‡ not carried in stock, but shipped direct from factory.

ECO

AIR AND WATER STATIONS

(Continued from preceding page.)

Specifications.

Air station for supplying autoists with compressed air for automobile tires. The unit can be set anywhere that electric current and water are available. Motor-driven compressor in base of station pumps air as it is required. The hose is controlled by a coin device making it necessary to drop in a coin before air can be obtained. Compressor runs only while station is being used. Unit furnished with relief valve to guard against excessive pressure. Compressor unit contains separator to take the oil and moisture out of the air before it enters the tire. Gauge in top gives indication of tire pressure. Water faucet is connected to city water or other source of supply.

Stations are built of gray iron with steel base reel. Spring is in oil bath; spring tension adjustable. Spindle and hose is connected directly to compressor. Compressor is of ample capacity for work; driven by ¼-horsepower motor. Alternating current, single phase 110-volt motor furnished unless otherwise ordered. When desired a 32-volt direct current motor can be furnished, making it possible to operate this station from the standard 32-volt isolated plant installation. Globe at top is provided with electric light. Station finished with weather resisting blue enamel finish.

‡No. 17 (See cut.) Height, 6 feet 5 inches; width, 26 inches; sub-base, 17¼x26 inches; ¼ inch air hose 32 feet long. Gauge reads to 200 pounds and shows approximate tire pressure. Station furnished to be operated by nickel, dime or quarter as ordered. Shipping weight, each, crated, 375 pounds. Each $340.00

‡No. 15—Same as above except with low gauge housing. Height 4 ft. 6 inches. Shipping weight, each, crated, 360 lbs. Each..... $25.00

Either No. 15 or No. 17 can be easily adapted to free air service, if desired.

‡Large Sub-Base only $25.00

CEILING AIR STATIONS

A ceiling station or reel for use in garages, service buildings or other places where it is desired to reach various cars with an air hose and yet to have it out of the way except when wanted. By installing one or more of these in a garage, any car can be reached without moving it. The station consists of a hose reel with patented spindle air connection so that air can be drawn from the hose at any time. This station is not equipped with a cut-off, but is furnished with 50 feet of special Eco brand oil-resisting hose, and the spindle joint is very carefully packed to guard against leaks. The lengthened life of the hose alone will pay for the station

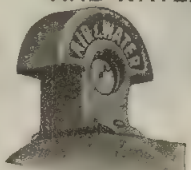
Specifications.

Ceiling air stations are of circular steel plates mounted on a framework of the best grade of iron castings. The patented spindle connection is of hard brass, preventing corrosion by moisture in the air. Air connection is made by ⅛-inch pipe feeding in at rear end of spindle. Length of hose hanging from reel, when wound up, can be adjusted by moving bumper ball. Attractively finished in blue enamel.

‡No. 31—Operates by a 65-pound counterweight; 50 feet of rope, one extra pulley and counterweight furnished with station. Travel of counterweight, 5 feet; height, 25 inches; width, 26 inches; thickness, 9 inches. Shipping weight, each, crated, including counterweight, 155 pounds. Each..... $45.00

‡No. 30—Same as above except operated by motor spring in oil bath in place of counterweight. Dimensions same as given for No. 31 station. Shipping weight, each, crated, 130 pounds. Each 55.00

GARAGE HOUSING FOR AIR AND WATER STATIONS



Same as used on No. 10 and No. 15 stations. Housing is shipped with "Air and Water" sign of ruby glass as shown, less gauge.

‡Eco—Shipping weight, each, 10 pounds. Each $3.50

LIGHT STANDARD FOR AIR AND WATER STATIONS

Same as used on No. 12 and No. 17 stations. Can be installed on models now in use. Standard is shipped complete with globe, light receptacle, wire and gauge connection. No gauge is furnished.

‡Eco—Height of stand-16 inches; size of globe, 12 x 4 inches. Weight, each, 25 lbs. Each $15.00

Items marked thus ‡ not carried in stock, but shipped direct from factory.

COLUMBIA PICTURES
PRESENTS

THE FOOLISH VIRGIN

BY
THOMAS DIXON

FEATURING

ELAINE HAMMERSTEIN

A good picture is always a successful picture. A successful picture has three basic elements which make for Box Office results.

In THE FOOLISH VIRGIN these elements are combined in their proper relation to make an incomparable production.

STORY—Thomas Dixon wrote THE FOOLISH VIRGIN. The published novel was read by millions in the course of its National Circulation.

STARS—Miss Hammerstein has a well established, solid public. She is liked by all for her work. Robert Fraser, called the screen's greatest lover by Pola Negri, is well fitted to play with Elaine Hammerstein by his acknowledged successes in the past.

DIRECTOR—George W. Hill's reputation for fine pictures is built on the sure ability to harmonize STORY and STARS.

CAST—Gladys Brockwell, Phyllis Haver, Lloyd Whitlock, Irene Hunt, Howard Truesdell, Jack Henderson, Roscoe Karns, Oliver Cross, Ed Borman and "Spec" O'Donnell.

A COLUMBIA PRODUCTION

ROOM 806 — 1600 Broadway

they want with more avidity than they have displayed in several seasons.

"More sales at slightly better prices in the small towns is, to my mind, one of the best indications that the new season will be productive of more revenue to the producer and increased box office receipts to the exhibitor than was the case during the last two or three seasons. We are convinced that the market among the small town exhibitors is going to be better this season than ever before in our history."

* * *

RICARDO CORTEZ IN NEW YORK

Ricardo Cortez, who has one of the principal roles in Cecil B. DeMille's production "Feet of Clay," has arrived in New York from Hollywood.

Cortez came to New York to appear in another Paramount picture "Argentine Love" which will be made at the Paramount Long Island studio, and which will form the second Paramount starring vehicle for Bebe Daniels.

In addition to DeMille's "Feet of Clay," now being exhibited, Ricardo Cortez will soon be seen in James Cruze's latest production "The City that Never Sleeps."

* * *

INGRAM TO PICTURE IBANEZ' NOVEL

Rex Ingram, master director of the films, will leave for Paris within a month with his own production unit to make for Metro-Goldwyn release, a screen version of Blasco Ibanez' novel, "Mare Nostrum."

Ingram, who has been in virtual retirement since his return from North Africa where he filmed "The Arab", has recovered from the illness which forced him to give up his screen activities.

For some time he has a number of novels under consideration for his next production for Metro-Goldwyn release, finally determining on the Ibanez novel, "Mare Nostrum." It was Ibanez' "The Four Horsemen of the Apocalypse" that first brought Rex Ingram to the attention of the world.

Mr. Ingram has already begun to engage members of his company. Willis Goldbeck, who adapted "Scaramouche" to the screen will work with the director on the adaptation and continuity of "Mare Nostrum," and will accompany the Ingram unit abroad. "Mare Nostrum," however, will be the biggest task he has undertaken.

The exterior scenes will be filmed in France and Spain, on the actual locations described by the author in the novel. "Mare Nostrum," which is translated "Our Sea," is a modern story treating of intrigue and revenge.

Joe Brandt Replies To Criticisms

Says Independent Pictures Deliver the Goods

IN a recently published report of a letter from a "prominent salesman" in the Chicago territory, it is stated that the independent producer has not the ghost of a chance.

That all sounds very pessimistic and convincing but is not entirely the case

It is true that the independent pictures do not have much chance in Chicago for a first-run but it has been known to happen. That territory is largely controlled by two circuits which are in turn interested in large producing companies

The exhibitors up town have the idea that they can only show the pictures which have had a first run downtown In this they are in line to get themselves thoroughly block-booked to the exclusion of the good independent pictures which are money makers as the books of only too many exhibitors will show.

The big producer-distributor firms do a great deal of national advertising to make names for their pictures and stars. This means high rentals.

What do the chain theatre men care?

They get it both ways. If the rental is high the money comes back to them in the form of their interest in the producing company. When the independent exhibitor takes on a block of pictures just to get a second run on a few well advertised features he gets out at the small end of the horn

Rex Ingram during the production in North Africa of Metro's feature "The Arab" gratified an ambition when he appeared in Shiek costume and allowed the cameraman to record his so-called disguise.

Kitchen, Wall, Office and Alarm Clocks

KITCHEN CLOCKS

Victor Assortment of Kitchen Clocks, very fancy ornamental cases, made of seasoned wood, varnished finish, 23¾ in. high, fancy carved, ornamented glass doors, fitted with guaranteed American movements, 8-day half hour strike, best values in the line, assorted 3 style, 2 of each, 4 oak and 2 walnut finish, in case, no less sold.

No. 60W60. Per case of 6.. **17.00**

REGULATOR

Store Clock, fancy oak case, height 37 in., width 15¼ in., 12 inch dial.

No. 60W61. 8 Day Time. Each **7.25**

No. 60W62. 8 Day Strike. Each **8.25**

No. 60W63. 8 Day Time Calendar. Each..... **7.55**

No. 60W64. 8 Day Strike Calendar. Each..... **8.55**

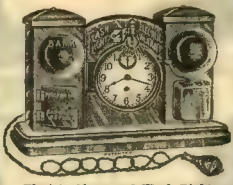
HALL REGULATOR

Store or Hall Clock, 12 in. dial, octagon drop. Guaranteed movement. Solid oak case, gloss polish. Fancy veneer front, 27 in. high.

		Each
60W65.	8 day time	5.50
60W66.	8 day with calendar	5.75
60W67.	8 day strike	
60W68.	8 day, strike calendar	7.75

Call-Me Electric Alarm Clock. Guaranteed time-keeper with electrical attachments. Press the button and see the time at night. May also be used as a call bell by changing the tips on end of cord, and by detaching cord, it makes a most excellent mantel clock. Fitted with forty hour guaranteed American made movement, convex glass, cabinet is finished hand rubbed mahogany finish. Alarm is operated by a dry battery in the clock cabinet and will ring until the switch is shut off. Size 11 inches high by 7¼ inches.

No. 60W69. Each..... **6.50**



Electric Alarm and Flash Light Clock, best utility clock made. It contains also money bank with combination lock and a search light operated from bulb on end of long cord may be extended to bedside, when pressed illuminates the dial. It has strong, loud alarm operated with dry cell battery, fitted with a guaranteed one-day American movement. It is of fine workmanship and very handsome appearance. Best in its line.

No. 60W77. Each..... **6.35**

Festus Solid Oak Hanging Wall Clock, 8 day, half hour strike, height 26 inches, width 13½ inches, dial 6 inches. Solid oak on dark wood.

No. 60W104. Each..... **4.15**

ELECTRIC NOVELTY LAMPS

ELECTRIC BULBS ARE NOT INCLUDED WITH LAMPS

The Vamp Ostrich Plume Doll Lamp. Made of composition natural tinted and painted features, large painted eyes, hair wig covered with net veil. Height of doll 12½ inches, height over all, 20 inches, including plumes. Complete with cord, socket and plug. Two dozen in case, no less sold.
No. 2C150. Per dozen..... **12.00**

Indian Chief Design Lamp, height 18 inches, mounted on a 5-inch square base. A true artistic reproduction of an American Indian chief with feather head dress, also girdle, moccasins, and blanket. Complete with cord and plug. **Without shade.** Each in box. One dozen in crate.
No. 2C111. Per dozen..... **12.75**

Parcholine Shade, as illustrated above, 7 inches deep by 10 inches in diameter. Highly colored in a neat, attractive design, trimmed with gold braid.
No. 2C104. Per dozen..... **9.50**

Electric Camel Lamp, height 12 inches, length 7½ inches, is exact reproduction of a camel, finished in natural colors, equipped with traps in red, white and blue and brown colors, with cord and plug. **Without shade.** Each in carton. One dozen in case.
No. 2C82. Per dozen..... **13.75**

Parcholine Shade, as illustrated above, oval shape, size 6¾ inches by 10 inches, highly colored in neat and attractive designs.
No. 2C83. Per dozen..... **8.50**

SILK SHADES *for* NOVELTY LAMPS

No. 2C112

Silk Shade, oval shape, assorted two tone color combination, scalloped edge, braid trim, size 7 inches deep, 11 inches base, suitable for Novelty Lamps.
No. 2C112. Per dozen... **10.50**

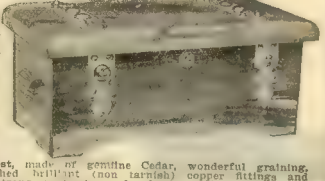
Silk Shade, Empire design, 6 inches deep by 10 inches in diameter, handsome 2-tone color combination trimmed with braid. Suitable for Novelty Lamps.
No. 3C113. Per dozen... **10.50**

No. 2C113

Geisha Electric Lamp

Geisha Girl Electric Lamp, artistic reproduction of Japanese Geisha Girl, made of composition tinted in colors fitted with cord and screw plug. Complete with collapsible Jap parasol shade. Each in box. 1 dozen in crate.
No. 2C122. Each..... **1.65**

Miniature Cedar Chests



Empty Chests
2 lb. Doz. **13.50**
5 lb. Doz **18.00**

Chests Filled with Candy
2 lb. Doz **16.50**
5 lb. Doz **22.50**

Cedar Chest, made of genuine Cedar, wonderful graining, highly polished brilliant (non tarnish) copper fittings and straps. A strong, durable made chest of high quality and lasting character. These Cedar Chests can be had either filled with candy or empty, as per catalog numbers listed below. The 2 lb Chest measures 9⅛x5⅝x3¾ inches. The 5 lb. Chest measures 11⅝x6⅞x4¾ inches. Each Chest packed in an individual carton.

No. A8137. 2 lb. **Chest, Empty.** Per dozen **13.50**
No. A8138. 2 lb. **Chest, Packed with Candy.** Per dozen . **16.50**
No. A8139. 5 lb. **Chest, Empty.** Per dozen **18.00**
No. A8140. 5 lb. **Chest, Packed with Candy.** Per dozen . **22.50**

Marble Art and Polychrome Electric Lamps

Electric Bulbs Are Not Included With Lamps

"Flower Girl" Marble Lamp. Height 12 inches. Made of ground marble, artistic reproduction of popular subject, beautifully tinted, fitted with socket, cord and plug. Furnished complete with 8 inch parchment shade, highly colored in neat attractive designs.
No. 2C172. Each complete... 2.75

"Blindfold" Marble Lamp. Height 10 inches, made of ground marble, an artistic reproduction of popular subject, beautifully tinted, fitted with socket, cord and plug. Furnished complete with 8 inch parchment shade, highly colored in attractive designs.
No. 2C174. Each complete 2.75

"Flower Boy" Marble Lamp. Height 12 inches, an artistic reproduction of popular subject, made of ground marble, beautifully tinted, fitted with socket, cord and plug. Furnished complete with 8 inch parchment shade, highly colored, attractive designs.
No. 2C173. Each complete.. 2.75

Multi-Lite Electric Boudoir Lamp

The Very Newest Novelty Lamp

—

Turns Up or Down From Full On to Very Dim and Out

—

Six Changes of Light

—

Fully Guaranteed

The "Multi-Lite" Electric Boudoir Lamp. Six changes of light, from full on to very dim and out. Works on direct or alternating current. Ivory finish metal base, completely wired with regulation length cord and 2-piece plug. Furnished with 10-inch translucent shade, hexagon shape, artistically decorated and trimmed with braid. Height overall, 15¾ inches. Lamp and shade packed complete, each in carton.
No. 2C175. Lamp and shade, complete. Each.. 3.75

Polychrome Finish Wood Table Lamp With Shade

Polychrome Table Lamp and Shade. Height over all, 25 inches, furnished complete with **16-inch Silk Shade,** assorted designs and colors. Shades are trimmed with gold braid and fiber silk fringe over mull valance. Polychrome antique gold bronze finish base, made of kiln dried lumber, beautiful stippilings, artistically tinted in harmonizing color combinations. Completely wired with **2 light clusters,** pull chain, regulation length cord and plug.
No. 2C180. Lamp and shade, complete. Each.. 8.50

ELLIOT FROG & SWITCH CO.

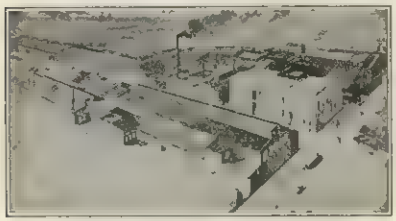
EAST ST. LOUIS, ILLINOIS, and PUEBLO, COLORADO

Manufacturers of

Track Equipment

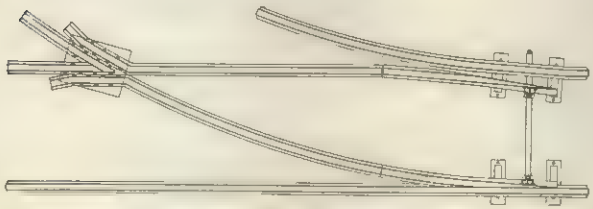
Products

Frogs; Switches; Crossings; Crossovers; Switch Stands; Guard Rails; Guard Rail Clamps; Switch Rods; Friction Plates; Rail Braces; Special Lay-outs; Manganese Track Work, etc., for Mines, Smelters, Yards, Electric and Steam Roads.

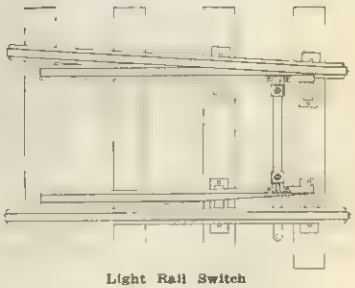


East St. Louis (Illinois) Plant

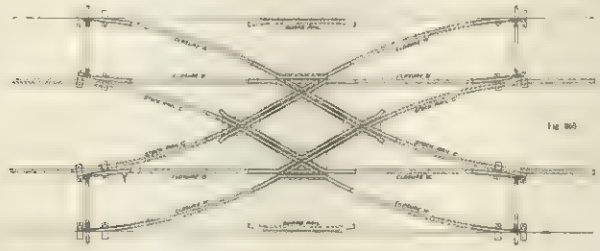
Pueblo (Colorado) Plant



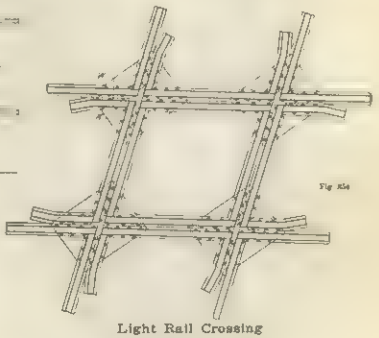
Light Weight Turnout



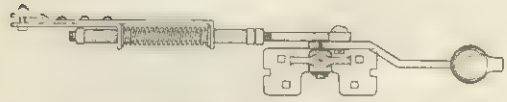
Light Rail Switch



Double Cross-Over

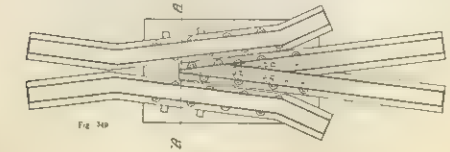


Light Rail Crossing



Light Ground Throw with Spring Connecting Rod

Light Ground Throw with Rigid Connecting Rod



Mine Frog

Send Us Your Inquiries When in the Market For Light Weight Track Material.

L. A. Green Railway Equipment Co.

ESTABLISHED 1902

First National Bank Building
PITTSBURGH, PA.

Manufacturers of

The "Durabil" Titanium Frog

TRACK SPECIALTIES

Products

Complete Track Equipment; Switches, Frogs, and Crossings; Special Lay-outs—Incline, Tipple and Shaft Bottom; Splice and Angle Bars; Tie Plates; Steel Ties and Track Accessories. New and Relaying Rails; Mine Cars—New and Used; Mining Machines, Motors and Generators—New and Rebuilt; Steam, Electric and Gasoline Hoists.

Designed by Practical Men for Practical Service

It is far more economical to buy a good frog once and always be satisfied than to buy a cheap frog every little while and never be satisfied. Green's "Durabil" Titanium Steel Frogs enjoy the highest praise by every user.

There are four points, each essential, that combine to make the "DURABIL" a Frog for Endurance, for practical long-lasting economy:

(1) Designed Right

(2) Built Right

(3) Of the Right Material

(4) Anti-corrosive

Its special features combine to make this remarkable Frog cost less to install, last longer in service, cost less in the end.

This type of frog shows great resistance to the corrosive action of acid mine water due to the heavy one-piece construction and the fact that it is made of a special Titanium Treated Steel. Furthermore, the absence of bolt or rivet holes furnishes no opportunity for acids to start their corrosive action, therefore will outlast many riveted frogs.

The Proof

To prove that the "Durabil" Frog is far superior to other types we will ship you a trial order prepaying the freight and, if the frog is not all that we claim, you may retain it gratis and the charge will be cancelled.

Guarantee

In addition to supplying a better frog at a lower price, we guarantee the "Durabil" for its life against breakage. Should a frog break before it is worn out, irrespective of the number of years in service, we will furnish a replace shipment free of cost and **prepay the freight.**

"Durabil" Frogs are recommended by every user.

Carried in stock for use with standard rails of 12 to 60 lb., and all standard curves. Furnished complete with bolts, nuts and lockwashers.

Blue prints with dimensions for your layout furnished with each shipment.

This Year the Sales Tide Turns to Elto

Ole Evinrude's Fastest Light-Twin

The 1924 Elto has many exclusive features. It is the unapproachable leader. Lightest per H.P., Fastest, Easiest Starting, Safest. Designed and built by Ole Evinrude in his own factory and under his own supervision.

You will be surprised at the number of Elto Outboard Motors you can sell this year—and the easy profit you can make, too.

Every summer cottager, vacationist, fisherman and hunter is interested in seeing this marvelous Light-Twin Motor at work. Just carry it with you anywhere, attach instantly with thumb screws to stern of any rowboat, and enjoy clean, refreshing, speedy water sport.

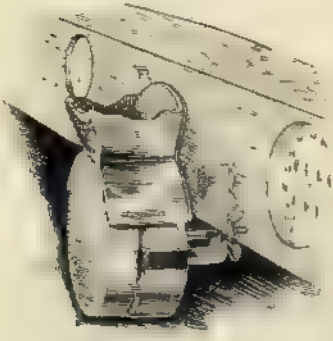
Write for Dealers' proposition today. State territory wanted.

—½ more power.
—Lightest of all motors for its power.
—The fastest outboard motor in the world.
—Only instant starting motor ever built.
—Absolutely safe rubber steering.
—Propello Pump—[illegible]
—Instant [illegible]
—Safest [illegible]

ELTO OUTBOARD MOTOR COMPANY OLE EVINRUDE President
Dept. 43, Manufacturers' Home Building. MILWAUKEE, WIS.

READ!

An Ash Receptacle Every Motorist Will Want



"AUTO HAVE"
Ash Receptacle

FEATURES

1 Clamps onto dashboard or card table etc., solid. No drilling necessary.

2 Transferable one piece to another. Adjusted in jiffy. Contact parts protected by soft felt

3 Mouth opens and closes by turning drum. No stub odors interfere with your enjoyment

4 Place to rest pipe, cigar or cigarette and light matches

5 Made of aluminum. Absolutely fireproof. Will not rust. Keeps polished.

6 Retails at $2.00
Price to Dealer 1.20
Profit 80c

7 Packed in individual cartons with complete attachments

8 Neat counter display sent you, showing receptacle mounted.

Send for further description and sample

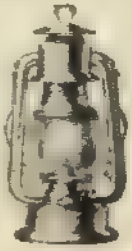
The Torrington Specialty Co.
Torrington, Conn.

National Advertising Campaign in 28 Leading Farm Publications with Total Circulation of 5,385,000

starts the middle of August. Be prepared to take care of the demand in your territory that will undoubtedly be created for

Embury
SUPREME OIL LANTERNS

Try This Experiment



Put your regular line on display where your customers may pick them up and examine them. Include the line of Embury Supreme Oil Lanterns. Without any sales effort on your part see which line sells the most. Then push the sales of that and double your lantern sales. We know from experience that Embury's always win out.

Note, illustrated, is one of the big sellers. Its ten candle power burner gives 25% more light and burns 35 hours. Dust-, dirt-, wind- and rain-proof.

Ask us to send you this beautiful and striking window display, 22" x 34", lithographed in 5 colors

Write for descriptive catalog and prices

EMBURY MANUFACTURING CO.
Warsaw Dept. A E New York

It pays to mention GOOD HARDWARE when ordering advertisements

Just Simple Arithmetic

AN $8.50 sale-at-retail. A broadly advertised and increasingly popular piece of super quality merchandise. And, a correspondingly higher profit per sale. This certainly is a better business proposition than a smaller per-unit sale of a less universally-satisfactory article at a considerably smaller per-sale profit.

The new Sunbeam Set means more iron sales, with a bigger profit-margin to the retail dealer, than any other electric iron.

Get the facts about the special Sunbeam introductory deal from your jobber. Or, write us and we'll start a name of jobber through whom you wish to be supplied

CHICAGO FLEXIBLE SHAFT COMPANY
5562 Roosevelt Road, Chicago, Ill.

Sunbeam
THE IRON OF IRONS

It pays to mention The National Magazine in answering advertisements

He was a theatrical producer; she was his beautiful new star; what did he say to her to bring this expression to her face?

Murray W. Garsson *presents*

THE SPITFIRE

Adapted from Frederic Arnold Kummer's daring tale of today, "Plaster Saints", with a

SPECTACULAR CAST

Directed by William Christy Cabanne

JUST LOOK AT THE

Cast; Betty Blythe, Elliot Dexter, Robert Warwick, Lowell Sherman, Burr McIntosh and Pauline Garon. Where have you seen a better cast?

Author; Frederic Arnold Kummer, popular novelist.

Producer; well known as a successful producer of money-making pictures. Producer of "Success," "Counterfeit Love" and "Broadway Broke."

Director; Cabanne is one of the best known directors in the business. His successes are legion.

Story; great. Filled with dramatic moments.

Sets; costly, big.

This picture is just the kind your audiences like. It's daring but not dangerous; thrilling but not too melodramatic.

IT'S ALL PICTURE!

ASSOCIATED EXHIBITORS

ARTHUR S. KANE, *President*

Physical Distributor
Pathe Exchange, Inc.

Encore Pictures

Foreign Representative
Sidney Garrett

"I heard him say~!"

A William Christy Cabanne Production

The Sixth Commandment

A drama of modern love and hate

Was her duty to her lover or the law?

She had overheard him say just three words.

Should she repeat them they might hang him.

She had sworn to tell the whole truth and nothing but the truth.

Should she tell?

A real drama of modern life, with an amazingly fine cast which includes William Faversham, Charlotte Walker, Edmund Breese, John Bohn, Charles Emmett Mack and others.

ASSOCIATED EXHIBITORS

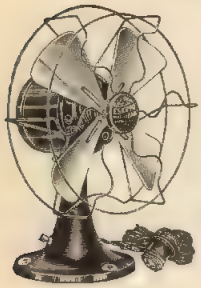
ARTHUR S. KANE, *President*

Physical Distributor
Pathe Exchange, Inc.

Encore Pictures

Foreign Representative
Sidney Garrett

ELECTRIC FANS
ESKIMO



Model 10

New and improved model. It has full 8 inch bronze blades, with off and on switch mounted in the base, self-aligning bearings and swivel joint

Positively will not creep Complete with 8 feet of cord and two piece plug. Operates on 110 volts A. C. or D. C. current.

Each

Model 10—8 in. bronze blades, wt. each 6 lbs. . $5.50

One in a carton.

Model 80

Good quality at a reasonable price

It has 9 inch bronze blades and a heavy, quiet-running motor with self-aligning bearings.

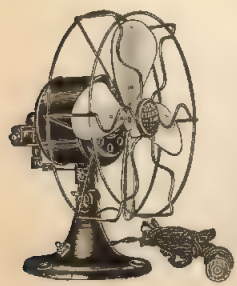
This fan also has a toggle switch in the base, swivel joint and positively will not creep. Operates on 110 volts A. C. or D. C. current.

Complete with 8 feet of cord and two piece plug.

Each

Model 80—9 in. bronze blades, weight each 7 lbs. $7.00

One in a carton.



Model 20, Oscillating

New two-speed fan. It has a very finished appearance, is guaranteed dependable, runs quietly and will not creep.

There is a two-speed toggle switch in a heavy cast frame. It has self-aligning bearings, swivel joint and is adjustable to any angle.

Operates on 110-120 volts A. C. or D. C. current. Complete with 8 ft. of cord and two piece plug.

Each

Model 20—10 in. bronze blades, weight each 7½ lbs. . $10.00

One in a carton.

ELECTRIC FANS
PEERLESS

HIGHEST QUALITY

Oscillating

Beautifully finished baked-on black enamel with polished and lacquered brass blades adopted for office use.

Has a powerful, continuous blast of cool, invigorating fresh air, with that breeze directed so that office papers are undisturbed. Complete with cord and plug. Alternating current 110 volts, 60 cycles. Three-speeds, high, medium, low.

Model	FF1	FF2
Diameter, in	12	16
Watts	40	75
Full speed	1600	1550
Weight each, lbs.	30	38
Each	$29.00	34.00

One in a box.

ELECTRIC COFFEE PERCOLATORS
DOVER

Heavy gauge copper bodies, tinned inside, all joints crimped or riveted, heavy aluminum coffee basket, spreater plate and pump

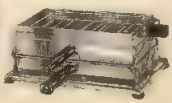
No-Burn-out heating element, pure nickel terminals, unbreakable glass top, equipped with pearl gray silk cord and strain relief plugs.

Full polished nickel finish, black rubberoid handle.

Nos.	606	609
Capacity, cups	3 to 6	4 to 9
Watts	470	470
Weight each, lbs	5	5¼
Each	$9.00	10.50

Three in a carton

ELECTRIC GRILL AND TOASTERS
SUNBEAM



Cooks the Whole Meal

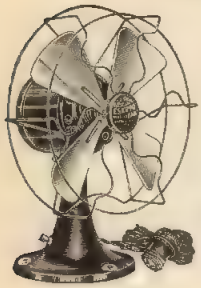
Nickel plated, turns the bread over and toasts it flat. No hands touch the toast. It will handle efficiently toasted sandwiches or fancy shapes of bread and crackers. It boils, fries, and broils. Supplied for 110 volts.

Each

SunBeam—7 in. wide, 11⅝ in. long, 4⅛ in. high, 46 square inches of toasting surface, complete with 6½ ft. of silk bound cord, weight each 5 lbs. . $10.50

One in a box

ELECTRIC FANS
ESKIMO



Model 10

New and improved model. It has full 8 inch bronze blades, with off and on switch mounted in the base, self-aligning bearings and swivel joint

Positively will not creep Complete with 8 feet of cord and two piece plug. Operates on 110 volts A. C. or D. C. current.

Each

Model 10—8 in. bronze blades, wt. each 6 lbs. . $5.50

One in a carton.

Model 80

Good quality at a reasonable price

It has 9 inch bronze blades and a heavy, quiet-running motor with self-aligning bearings.

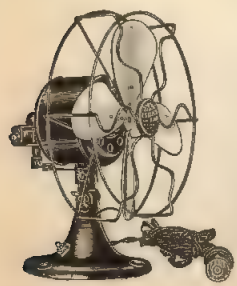
This fan also has a toggle switch in the base, swivel joint and positively will not creep. Operates on 110 volts A. C. or D. C. current.

Complete with 8 feet of cord and two piece plug.

Each

Model 80—9 in. bronze blades, weight each 7 lbs. $7.00

One in a carton.



Model 20, Oscillating

New two-speed fan. It has a very finished appearance, is guaranteed dependable, runs quietly and will not creep.

There is a two-speed toggle switch in a heavy cast frame. It has self-aligning bearings, swivel joint and is adjustable to any angle.

Operates on 110-120 volts A. C. or D. C. current. Complete with 8 ft. of cord and two piece plug.

Each

Model 20—10 in. bronze blades, weight each 7½ lbs. . $10.00

One in a carton.

ELECTRIC FANS
PEERLESS

HIGHEST QUALITY

Oscillating

Beautifully finished baked-on black enamel with polished and lacquered brass blades adopted for office use.

Has a powerful, continuous blast of cool, invigorating fresh air, with that breeze directed so that office papers are undisturbed. Complete with cord and plug. Alternating current 110 volts, 60 cycles. Three-speeds, high, medium, low.

Model	FF1	FF2
Diameter, in	12	16
Watts	40	75
Full speed	1600	1550
Weight each, lbs.	30	38
Each	$29.00	34.00

One in a box.

ELECTRIC COFFEE PERCOLATORS
DOVER

Heavy gauge copper bodies, tinned inside, all joints crimped or riveted, heavy aluminum coffee basket, spreater plate and pump

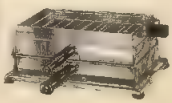
No-Burn-out heating element, pure nickel terminals, unbreakable glass top, equipped with pearl gray silk cord and strain relief plugs.

Full polished nickel finish, black rubberoid handle.

Nos.	606	609
Capacity, cups	3 to 6	4 to 9
Watts	470	470
Weight each, lbs	5	5¼
Each	$9.00	10.50

Three in a carton

ELECTRIC GRILL AND TOASTERS
SUNBEAM



Cooks the Whole Meal

Nickel plated, turns the bread over and toasts it flat. No hands touch the toast. It will handle efficiently toasted sandwiches or fancy shapes of bread and crackers. It boils, fries, and broils. Supplied for 110 volts.

Each

SunBeam—7 in. wide, 11⅝ in. long, 4⅛ in. high, 46 square inches of toasting surface, complete with 6½ ft. of silk bound cord, weight each 5 lbs. . $10.50

One in a box

EVEREADY UNIT CELLS, in 2 sizes, fit and improve all makes of flashlights.

22 fine flashlights —*new features*

TWENTY-TWO fine flashlights in the four general types illustrated above. Newly designed cases. New features. New reasons for selling the *perfect portable light for every purpose and purse*. There's the new safety-locking switch that cannot be turned on by accident. Then there's the octagonal lens ring—better looking, easier to screw on and off. Prevents rolling.

The new ribbon-pattern fibre cases are practical, good looking, water proof, warp-resisting. Eveready standard features are retained, of course. No change in prices—65 cents to $4.50 retail complete with battery—anywhere in the U. S. A. NOW—sell the new line! Ask your jobber.

Manufactured and guaranteed by

NATIONAL CARBON COMPANY Inc., New York, San Francisco
Canadian National Carbon Co., Limited. *Factory and Offices* Toronto, Ontario

EVEREADY
FLASHLIGHTS
& BATTERIES
—they last longer

National Tie-Ups for "Never Say Die"

EXHIBITORS Trade REVIEW

The Business Paper of the Motion Picture Industry

Price 20 cents

August 23, 1924

FAIRMONT MINING MACHINERY CO.

FAIRMONT, W. VA.

Sales Offices
Huntington Supply & Equipment Co Huntington, W Va
Keiser Geismer Engineering Co., Birmingham, Ala
McCombs Supply Company Harlan, Ky.

TRADE MARK REGISTERED
FAIRMONT

Sales Offices
Fairmont Mining Machinery Co., State Bldg. Pittsburgh, Pa.
Evansville Structural Supply Co., Evansville, Ind.
Industrial Supply Co., Terre Haute, Ind.
O. H. Davidson Equipment, Co., Denver, Colo.

Steel Mine Ties

Fairmont Specialties Include

Steel Mine Ties; Portable Gathering Pumps; Railroad Car Retarders; Box Car Loaders; Steel Mine Cars; Turtle Back Strainers; Power Coal Augers.

Fairmont Tipple Equipment Includes

Tipple Structures—steel and wood; Conveyors, all types—either for outside or underground transportation; Picking Tables; Loading Booms; Car Hauls; Shaker Screens; Gravity Screens; Trip Feeders; Trip Makers; Dumps—Kickback, Crossover and Rotary.

Style "B" Tie Used Under Joints in Order to Eliminate Splice Bars

Features of Fairmont Steel Mine Ties

There are no nuts or bolts to rust or get lost, and no movable parts to rust and break off.

No spikes or splice bars are needed to lay track with the FAIRMONT Tie; all that is necessary is a wooden wedge which can be split out of any old timber.

In case of a fall, less trackage is lost, as a track laid with steel ties can be withdrawn more easily and quickly than track laid with wooden ties.

Track laid up with steel mine ties costs less per hundred feet than track laid up with wood ties.

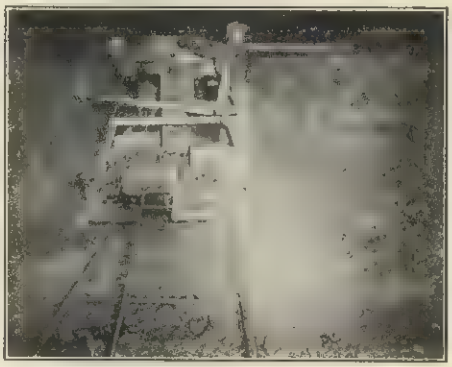
The track is easily advanced to keep up close to the coal by use of the jumper rail.

Makes track true to gauge.

Makes track solid, so that cars run easily and do not jump off.

Gives more head room.

Miners can save expense and delay by laying their own track.



A 7-Ton Mining Machine With a Sweep of 21 Feet Operating On Fairmont Steel Mine Ties

Less lift to put cars on track, in case of wreck.

Only one-third as many ties required as wood and they can be used for years.

Ties easier to handle and track laid more easily and faster.

Ties easy to straighten out if bent.

Standard tie for 20-pound rail can be used with 16 to 30 pound rail, which is quite an advantage in mines having more than one size rail.

FAIRMONT Ties have proven themselves just as desirable and economical in high coal as in thin veins.

Showing Method of Advancing Jumper Rail

A Word About the Jumper Rail Feature

One of the most important and one of the most practical advantages of FAIRMONT Steel Ties is the simple method of advancing the track so cars can be run close up to face for loading. This feature alone makes FAIRMONT Ties a better investment than any other tie on the market.

Write For Bulletins.

FULTON TOOL WORKS

Established 1882 Reorganized 1918

HUNTINGTON, WEST VIRGINIA

Manufacturers of

THE FULCO TRADE MARK and FULTON LINE

Complete Line of High Grade Coal Miners' Tools

A Dependable Source of Supply

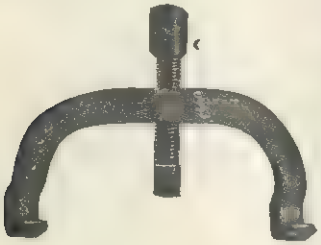
Track Adze

Without handles. Made in 3½ and 4 lb. weights. A handy tool for track men.

"FULCO" Track Adze

Rail Benders

For rail up to 25 lbs. Forged from best Open Hearth Steel. New design extra strong "Jaw". Will do the work.



Mining Machine Bits

Made from Special High Grade Bit Steel. Full size. Forged, not pressed—insuring uniform bits and service.

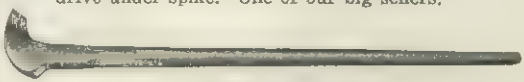
Bit blanks or steel also furnished.

Crow or Pinch Bars

Made either wedge or pinch point. Solid steel. Weights up to 20 lbs.

Spike Bar

For track men. With special heel — easy to drive under spike. One of our big sellers.



"FULCO" Mine Spike Bar

Power or Electric Augers

Shank to fit any standard drill or special shank if desired. Any length up to 12 ft. Oval type 1¼ in. up to 2 inches. Square edge type 1¼x½, 1½x½ and 1¾x½ inches.

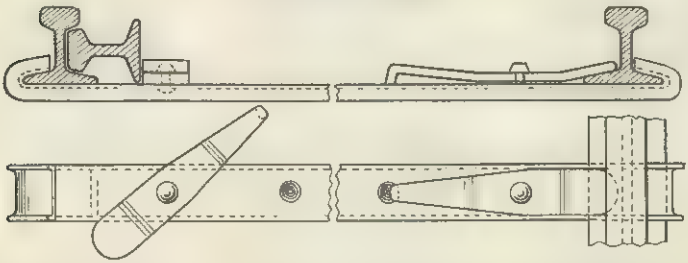
Bit Tongs.

Ratchet Rock Drills.

THE "DALGATE" STEEL MINE TIE

(PATENTED)

"The Tie That Binds"



You Don't Need a Wedge—Think "that" over. Comes complete ready to use.

Made with Special Spring Steel Clip—will not slip. An absolute fit for each size rail. Makes a firm and rigid track.

Eliminates spread or turnover of rail.

Note — Special "Jump-rail" feature. Simply swing clip around and drop in rail. Quickly laid and taken up.

Made for rail 12 to 40 lbs. Specify gauge, also weight of rail.

Catalog upon request.

High Grade American Made Pocket Knives

Flylock Pocket Knife

Safety Push Button Knife

Safety Push Button Knife. 2 Blades, large blade crocus polished on one side. Bone Stag handle, brass lined, cleaned inside. Length closed 3⅝ in. ½ dozen in box.

No. 10C531. Per dozen... **11.50**

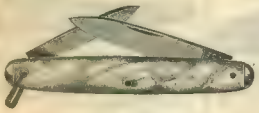
"Flylock" Pocket Knife Assortment. Automatically opens and locks in one operation. Two blades, assorted handles. Length 3⅜ in. Blades are forged from the finest cutlery steel. One dozen assorted in easel back display case.

No. 10C533.
Per Assortment of 12..... **13.50**

Safety Push Button Knife

Safety Push Button Knife. 2 Blades, large blade crocus polished on one side, assorted celluloid handles, brass lined, cleaned inside. Length closed 3⅜ inches. ½ dozen in box

No. 10C532. Per dozen... **11.50**



Pearl Handle Pocket Knives

Pearl Handle Pocket Knife. 2 blades, spear and pen, large blade crocus polished on one side, brass lined, nickel silver tips and shackle. Length closed 3⅜ inches. ½ dozen in box.

No. 10C617. Per dozen..... **15.00**

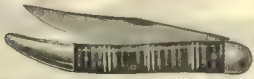
Pearl Handle Pocket Knife. 2 blades, spear and nail file, nickel silver lined with milled edge, nickel silver shackle for attaching to Waldemar chain. Length closed 3⅜ inches. ½ dozen in box.

No. 10C618. Per dozen..... **15.00**

American Made Jack Knives

Stag Handle Guard Knife. One large clip blade, crocus polished on one side, brass lined, nickel silver guard and cap. Length closed 3⅜ inches. ½ dozen in box.

No. 10C518. Per dozen..... **7.50**

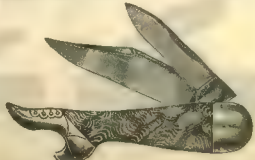


Large Jack Knife. One large clip blade, crocus polished on one side, Pyralin handle, assorted colors, candy stripe and peacock, brass lined, nickel silver bolster and cap. Length closed 5 inches. ½ dozen in box.

No. 10C513. Per dozen..... **8.00**

Pyralin Handle, Guard Knife. One large clip blade, crocus polished on one side, brass lined, nickel silver guard and cap, crimson color pyralin handle. Length closed 3⅜ inches. ½ dozen in box.

No. 10C519. Per dozen..... **8.00**



Pyralin Handle Leg Knife. 2 blades, clip and pen, large blade crocus polished on one side, assorted pyralin handles, brass lined, nickel silver bolster, and cap. Length closed 3¼ inches. ½ dozen in box.

No. 10C512. Per dozen..... **8.00**

Imported and American Made Hunting Knives

Imported Hunting Knives. Genuine deer foot handle nickel ferrule, steel double guard extra large, finely polished steel blades swaged back on both sides. Each in case with metal protected point. ½ dozen in box.

10C827. 5-in. blade, entire length 9¾ in. Doz. **10.50**
10C828. 6-in. blade, entire length 10¼ in. Doz. **12.00**

Imported Hunting Knives. Genuine deer foot handle, metal hoof plate, full size; curved fancy guard and ferrule, each in strong rigid sheath metal tipped; 5¼-inch blade. ½ dozen in box.

No. 10C829. Per dozen..... **13.50**

Imported Deer Foot Hunting Knife, one large scimiter blade, polished, self-locking brass bolster, polished steel lined, with strong corkscrew. Genuine deer foot handle, natural hair and polished hoof; 8⅝ inches long. ½ dozen in box.

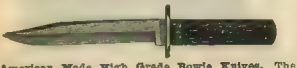
No. 10C825. Per dozen..... **16.50**

Imported Deer Foot Handle Hunting Knife. Two blades, one 4 in., the other 2½ in., self-locking when opened. Pressing on small blade releases the spring and the large blade shuts; fancy brass bolsters, and brass lined. Genuine deer foot handle, fine polished corkscrew at back. *Length* 8¼ inches. ½ dozen in box.

No. 10C803. Per dozen..... **27.00**

American Made Hunting Knife, 5 inch blade, forged from heavy gauge steel, perfectly tapered and ground to a keen edge. Double swage back, nickel silver guard and butt, easy-grip rosewood handle. Complete with heavy cowhide leather sheath. ½ dozen in box.

No. 10C835. Per dozen..... **12.00**



American Made High Grade Bowie Knives. The standard style hunting knife. High grade heavy gauge forged steel sabre blade, hand ground, long swage, heavy nickel silver guard, non-slipping bone stag handle. Complete with cowhide leather sheath. ½ dozen in box.

No. 10C833. 5 in. blade. Per dozen..... **13.50**
No. 10C834. 6 in. blade. Per dozen..... **16.50**

American Made Faithful Scout Knife. Extra strong all around knife, 4½ inch blade forged from extra heavy gauge steel, perfectly tapered and ground to razor edge. Corrugated double swage point back, nickel silver guard and butt, bone stag handle. This knife is adapted for skinning, sticking, scaling, cleaning, etc., a popular favorite among "Old Scouts" and Boy Scouts. Complete with cowhide leather sheath. ½ dozen in box.

No. 10C836. Per dozen..... **15.00**

NEFT SAFETY KNIFE

Neft Safety Nife, made of crucible steel, scientifically tempered and ground to a keen edge. The shield decoration on handle is a back catch, when slid back the handle is released and opens. The blade is pulled out, handle then closes and locks, holding blade rigid. Eliminates all danger of cutting self. ½ dozen in box.

No. 10C832. Each..... **2.50** | Per dozen..... **29.50**

FLYLOCK HUNTING KNIVES

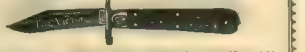
"Flylock" Press Button Hunting Knife. One large clip blade, highly polished on one side, stag handle, nickel silver bolster, steel lined. To open blade, press and draw button. Length closed 4⅝ inches ½ dozen in box

No. 10C838. Per dozen..... **13.50**

"Flylock" Press Button Hunting Knife. One large clip blade, highly polished on one side, stag handle, nickel silver bolster, steel lined. To open blade press and draw button. Length 5 inches. ½ dozen in box.

No. 10C839. Per dozen..... **14.00**

VICTOR PRESS BUTTON KNIFE



"The Victor" Press Button Hunting Knife. 3¾ inch clip blade, full polished, stag handle, steel lined, nickel silver bolster and guard which automatically falls in place when blade is opened. Entire length 8½ inches. ½ dozen in box.

No. 10C837. Per dozen..... **16.50**

The new Ford all steel body and weather-proof cab mounted on the Ford worm drive chassis at $490 f. o. b. Detroit, is the world's lowest priced complete one-ton truck

A Preference Based on Quality

There is deep significance in the fact that 78% of all trucks of one ton or less capacity in the United States are Fords.

This overwhelming preference for Ford haulage units has its basis in the low cost of Ford transportation, the rugged construction of the truck itself, and its unusual adaptability to every line of industry.

Mechanical excellence, simplicity of design and ample power are further factors that have contributed to the popularity of the Ford One-Ton Worm Drive Truck.

As a logical step in providing dependable transportation at the lowest possible cost, the Ford Motor Company is now producing an all-steel body and steel weather-proof cab mounted on the Ford Truck Chassis, selling at the remarkably low price of $490.

Merchants standardizing their delivery systems on Ford One-Ton Trucks have available the facilities and assistance of over 33,000 Authorized Ford Service Stations, conveniently located to their business.

FORD MOTOR COMPANY
Detroit, Michigan

See the Nearest Authorized Ford Dealer

Ford

CARS · TRUCKS · TRACTORS

BT 58

Operates Ford Ton Truck For $2.13 Per Day

The Ford Ton Truck is the all-purpose truck. For long and short distance hauling—for handling in traffic and around loading docks, freight cars and warehouses—for use on all kinds of roads, with every type of load—the Ford Ton Truck is universally accepted as the most practical trucking unit to operate.

The J. J. Ruff report is another link in the chain of evidence. He says: "The Ford Ton Truck also saves us money on our freight hauling. We buy nails and roofing by the carload, and the Ford and 2 men can unload a 40,000 lb. carload in 6 hours, hauling half a mile to the store.

"The local hauling rate averages 10c a hundred-weight, so it would cost us $40.00 to get a car unloaded. With our own Ford it costs us only $8.97, making our SAVING $31.03 a CAR. The truck also handles many small freight shipments.

"By hauling our supply of paint from the factory, 10 miles away, the Ford saves us freight charges and GETS THE GOODS TO US as soon as we need them.

"The cost of operating the Ford, without driver, is 4.4c per mile or $2.13 per day. With driver, it is 16.6c per mile or $8.13 per day."

Any Authorized Ford dealer will gladly arrange to give you a practical demonstration and help you to select the body type best suited to your needs. Experience qualifies him to render you a valuable service

Ford Ton Truck Chassis, $370 F. O. B. Detroit

Ford

CARS · TRUCKS TRACTORS

IT PAYS TO MENTION GOOD HARDWARE WHEN ANSWERING ADVERTISEMENTS

Fraternal Emblem Watches

12-Size 10-Year Green Gold Filled Cases with Chased Border Designs and Engraved Insignia of Fraternities as Illustrated on Back. Fitted Complete with Six Jewel Swiss Lever Movement. Fancy Metal Dial.

Prices Quoted are for Complete Watches

No. 4W147

ELK'S EMBLEM WATCH 5.20 Each

No. 4W148

SHRINE EMBLEM WATCH 5.20 Each

No. 4W149

KNIGHTS OF COLUMBUS EMBLEM WATCH 5.20 Each

No. 4W150

MOOSE EMBLEM WATCH 5.20 Each

FRONT VIEW
Showing Fancy Metal Dial Used on These Watches

No. 4W151

MASONIC EMBLEM WATCH 5.20 Each

Thin Model Open Face Screw Back and Bezel

GUARANTEED to Give Satisfaction

Men's or Boys' 12 Size Swiss Watches

7 Jeweled Movements. Gold Filled Cases. Excellent Values

No. 4W59. Men's or Boys' 12 Size Watch, open face, gold filled case, assorted fancy engraved designs. Warranted 5 years. Fitted complete with Hartford 7-jewel Swiss movement. Each..... 4.30

No. 4W63. As above in Hunting case. Each..... 5.15

No. 4W54. 12 Size Hartford Lever Movement, new model, full nickel, 7 jewels, compensation balance, breguet hairspring, exposed winding wheels, handsomely damaskeened and finished, fine white enameled dial, stem wind, pendant set. Open face.
Movement 2.90

No. 4W53. As above, in Hunting. Movement only.
Each 2.90

No. 4W60. Men's or Boys' 12 Size, open face, gold filled case. Guaranteed to wear 10 years. Assorted fancy engraved designs. Fitted complete with Hartford 7-jewel Swiss movement.
Each 5.37

No. 4W64. As above, in Hunting case. Each..... 6.70

By comparison you will find our prices on watches usually lower than the quotations you get elsewhere.

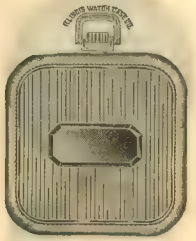
All watches are carefully examined and guaranteed to be in good running order before shipment.

Our ever increasing watch business is the best proof how uniformly low our prices are.

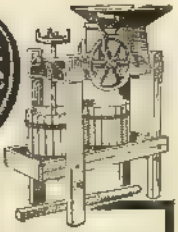
No. 4W48. Men's or Boys' Watch. 12 size open face 10 year green gold filled case, engraved assorted designs fitted complete with 7-jewel Swiss lever movement.
Each 4.75

No. 4W49. As above, 10 year green gold filled. Each..... 4.75

No. 4W55. Men's or Boys' 12 Size Octagon Shape, open face, gold filled. Warranted to wear 5 years. Engine turned, plain, polished or fancy engraved designs. Fitted complete with 7-jewel lever Hartford movement.
Each 4.75



No. 4W67. Men's or Boys' 12-Size Watch, open face, gold filled square shaped case, assorted, fancy engraved designs, stamped with the maker's name, warranted to wear for 5 years, fitted complete with Hartford 7-jewel Swiss movement. Each..... 5.35



Don't Overlook this Profitable Line

You know what the demand was last year for cider mills, fruit presses and Grape Crushers. It will be even better this year. Your trade has learned of the handsome extra profits to be derived from making cider, fruit juices, jelley from and grade fruit. Be prepared to cash in on this business.

Freeman Cider Mills, Fruit Presses and Grape Crushers

meet every demand in size style and quality. Made in both single and double tub styles, of finest materials by skilled experienced workmen. The larger sizes equipped with power pulley if desired.

The Standard for Half a Century

Get our catalog describing the complete Freeman line, including our special wood roller Grape Crusher. Sell the mill that gives complete and lasting satisfaction—that sells on its reputation. *Write today to get this line. Get catalog and prices.*

Write Department 383
FREEMAN MFG. CO.
Racine, Wisconsin

FREEMAN MANUFACTURING COMPANY

TANGLEFOOT FLY SPRAY

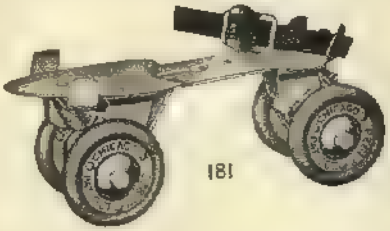
Tanglefoot quality costs no more than ordinary liquid insecticides. Ask your jobber for full particulars about this latest and greatest Tanglefoot product. Order your summer supply now

THE O. & W THUM COMPANY
GRAND RAPIDS, MICHIGAN

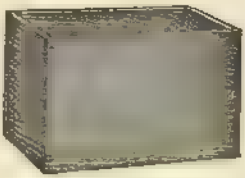
TANGLEFOOT

Fly Paper Fly Spray Fly Ribbon
Roach & Ant Powder Tree Tanglefoot

RUBBER or STEEL WHEELS
on
"CHICAGO" Roller Skates
OF QUALITY
Order Yours Now!



CHICAGO ROLLER SKATE CO.
4458 W. Lake Street



A Well Arranged Store Reduces Selling Costs

Keep your stock in perfect order and always clean and fresh in

Green's Shelf Boxes

Neat, serviceable, low priced. In use in thousands of stores throughout the country. Descriptive price list on request.

The A. H. Green Co., 105 Park Ave., New York
FROM YOUR JOBBER — OR DIRECT

Say you saw it in GOOD HARDWARE

F. O. SCHOEDINGER

COLUMBUS, OHIO, U. S. A.

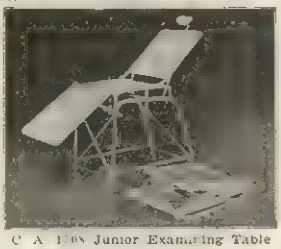
Manufacturer of

Aseptic Metal Hospital and Surgical Furniture

When emergencies occur in your plant, you need the kind of equipment that will properly handle these emergencies.

For over 25 years the FOSCO line of First Aid Metal Furniture has met the emergency needs of Industrial Plants so well that today it is considered standard equipment.

The C. A. 1208 Junior Examining Table here shown is dependable at all times, light in weight and can be folded as shown and easily carried anywhere.



C. A. 1208 Junior Examining Table

C. A. 1246 Moscow Operating, Examining and G. U. Table

If you desire a table with a G. U. equipment, select the C. A. 1246 Moscow Operating, Examining and G. U. Table here shown.

It has the Horizontal, Trendelenburg and G. U positions obtained by using machined worm driven gears and racks.

Surely a splendid all around table.

Or if something still a little heavier in construction is desired, the C. A. 1200 Arlington Examining, Operating and G. U. Table, here shown, will surely meet that need.

C. A. 1200 Arlington Examining, Operating and G. U. Table

C. A. 690 Instrument and Medicine Table

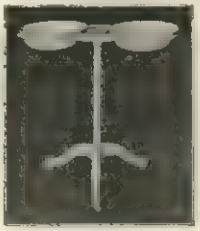
The C. A. 690 Instrument and Medicine Table, here shown, is strong, light in weight and is equipped with plate glass top and two shelves, also easy rolling casters.

Very dependable, and easily cleaned.

The C. A. 1456 Surgeon's Stool, here shown, is very strong and dependable and readily adjustable from 20" to 26" in height.

Stool has die drawn steel top which will not break.

C. A. 1456 Surgeon's Stool



C. A. 1660 Revolving Immersion Stand

The C. A. 1660 Revolving Immersion Stand, here shown, is equipped with two porcelain enameled deep basins.

The stand is strongly constructed and top portion may be revolved for quick and convenient use.

C. A. 90 Instrument Cabinet

The C. A. 90 Instrument Cabinet, here shown, is a most suitable part of an emergency equipment.

It stands 56" high, is 20" wide and 16" deep. It has pressed steel sides and top, three plate glass shelves and double strength glass door.

C. A. 1500 All Metal Chair

The C. A. 1500 all metal chair, here shown, is very substantial indeed and will stand very rough usage.

This chair frame is acetylene welded and the chair, because of curved seat, is very comfortable.

C. A. 1412 Irrigator Standard

The C. A. 1412 Irrigator Standard, here shown, is light, strong and adjustable to any height up to 8 ft.

Ask your Safety First Dealer for the FOSCO line. It is dependable and well worth while.

GARATE "333" WINS AGAIN

In the annual competition held in Spain in June this year, GARATE "333" won first prize over 28 competitors, for Accuracy, Durability and Mechanical Construction.

Insist on "The Removable Plate."

Only the Genuine

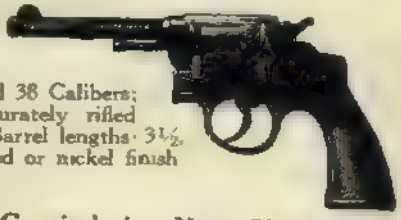
DROP FORGED STEEL

Have the Solid Frame and Removable Plate
—take no other

Not an Imitation -Sold on Merit

Manufactured by the greatest factory in Spain comparing favorably with the best American Revolvers– but sold at about half the price.

Double Action Hand Ejector Swing Out Cylinder



Made in 32, 32, 20 and 38 Calibers; splendidly finished; accurately rifled and fully guaranteed. Barrel lengths 3½, 4¼, 5 and 6 inches; blued or nickel finish

Complete Stock Carried in New York, also "EXPRESS" Automatics in 25 and 32 Calibers.

Write for Descriptive Circulars and Dealers Prices.

A Profitable Line sold at a popular price; quick turnover; less invested; quality guaranteed

GARATE & TROCAOLA, Inc. 52 Warren Street New York, N. Y.

It pays to mention GOOD HARDWARE in answering advertisements

‡WAGON AND STOCK SCALES

Made by N. B. Gaston Sons Co.

Reliable.

These scales have double trussed steel levers, all bearings are made of a good grade of steel, carefully tempered and sealed under the U. S. Standard. Heavy corned irons suspended from the frame support the hanging levers, allowing free and easy movement. Double brass beam is furnished unless otherwise specified. Beam cupboard is made of a good grade of matched lumber, painted two coats of white lead and fitted with lock and key.

Capacity, tons	4	5	6
Size Platform, feet	8x14	8x14	8x14
Shipping weight, lbs.	575	625	700
Each	$150.00	$172.50	$217.50

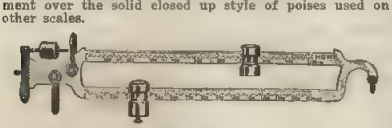
Full capacity compound beam in place of double brass beam, extra cost. Prices given above are exclusive of timber and foundation. Steel frame or office fixtures furnished at an additional cost. Prices on application. Directions for installing sent with each scale.

Howe.

The primary feature of this scale is the perfect free motion of platform at all times, eliminating a larger portion of inaccurate weighing caused by binding. Trouble from binding is more apt to occur under heavy loads where discrepancies in weights cannot be easily noticed. This difficulty in other scales is usually caused by the check rods, and being under cover they cannot be seen or the discrepancy noticed during the process of weighing. The only place where this scale may bind is between the platform and outer frame, caused by some obstruction, and which is at once detected as the beam will show immediately that the platform is not perfectly free.

Howe Beams Which Indicate the Weight.

The Howe Scale Co. was the first to design and build automatic machinery for notching and marking scale beams. It was found impossible to mark beams by hand accurately. The purchasers of Howe scales can always depend upon Howe being the finest finished and the most accurate made. You will notice a special feature that distinguishes Howe beams from all others and that is the milling out or rounding off the poise in the middle. That is done so one can read the marks plainer and to aid in the rapid handling of the poises. It's a great improvement over the solid closed up style of poises used on other scales.



Double Beam.

Has brass sliding poises and is marked with 1,000 pounds on the upper bar and 1,500 pounds on the lower bar. Loose weights are used to weigh the load beyond what is on the beam.

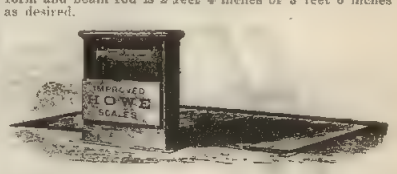
Compound Beam.

The Howe compound beam is especially well designed and has a remarkably quick, sensitive action. The figures can be read from either side and it weighs the full load without loose weights. This beam has the preference with users of wagon scales. The main or top bar has a brass bevel face, which always insures the figures being easily read as the weighman can look down on the figures instead of at an angle. The lower or tare bar, has sufficient capacity to balance a wagon or stock rack. The small or auxiliary beam indicates 200 pounds by 2½ pound marks, and is used to take the intermediate weight between the notches on the upper bar. The poise on the upper bar, traveling on rollers or wheels, preventing wear and having a self acting spring catch, is positively held in the proper notch.

These scales require a total depth of only 20 to 28 inches. The cost of preparing a foundation for any of them is less than that for other scales generally in use.

On 5-ton scales and under, the distance between platform and beam rod is 2 feet.

On 6-ton scales and over, the distance between platform and beam rod is 2 feet 4 inches or 3 feet 6 inches as desired.



Nos.	267	265	263	260	248
Capacity, ton	5	6	6	6	10
Platform feet	8x14	8x14	8x16	8x22	8x22
Weight, each, lbs.	1,000	1,100	1,300	1,600	1,500
Double beam, each	$205.00	235.00	235.00	265.00	310.00
Com. beam, each	235.00	265 00	265.00	295.00	340.00

Timber work and foundation for any of the above scales to be furnished by the purchaser.

Items marked thus ‡ not carried in stock, but shipped direct from factory.

WATER CONNECTION FOR AIR AND WATER STATIONS

This attachment is designed to furnish a convenient means by which the radiator may be filled with water direct, a service much appreciated by car owners. Projects out in front of station 12 inches. Equipped with self-closing bib.

‡Gooseneck — Height of gooseneck above top of station, 25 inches; length of hose, 3½ feet Shipping weight, each, crated, 10 pounds. Each $10.00

Items marked thus ‡ not carried in stock, but shipped direct from factory.

AIR HOSE REELS

Colfax.

This machine was made to get away from the old fashioned hose that lies in the street to get dirty and to be run over by automobiles. The Colfax is an automatic machine and winds itself up when the user lets go of the hose. The hose is always hung up and stretched inside of the machine and out of the sun and rain so there is no chance for wear when it is not in use.

One of the main features of this machine is the advertising space on the flat surfaces. The surfaces on either side of the machine are 18 inches by 5 feet, giving ample room for a good sign to be painted on it.

The entire machine is made of steel and cast iron, and it will last for years. It comes equipped with a 6-ply hose, the best that money can buy, and Schrader Air Chucks and Brunner Needle Valves are used. The hose in the machine extends 22 feet out from the box when pulled outs its full length.

The machine is shipped in any of the following combination of colors: Grey with red trimming, yellow with green trimming and white with green trimming. Your customer may have his choice of any of these colors. If no color is stated in your order, we will ship it grey with red trimming as we can get the best grade of iron paint in the grey and red colors.

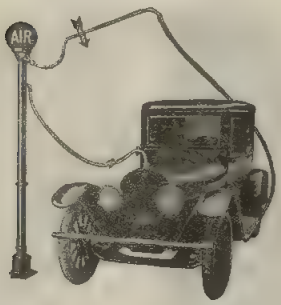
Colfax—Length before set in ground 7 feet, 4 inches; when set in the ground it stands 5 feet, 4 inches. Shipping weight, 250 pounds. Each, with light.....$65.00
Each, without light 60.00
Sign—Each 4.00

One outfit in a crate.

‡AIR AND WATER STATIONS

Romort.

Clean, Quick and Convenient.



Pleases your customer and protects your property.

Romort air and water stations for outdoor installations are provided with a twelve inch green electric light globe, which draws instant attention both to the air station and owners establishment. When installed at the curb and not in use it in no way interferes with traffic. When in use the arm through which the air hose passes is turned down, allowing attachment of the air hose to each of the car wheels and filling of the radiator without moving the car. After filling the tires the hose is simply released by the user and the arm automatically returns to the normal vertical position leaving the clear of the ground where it remains until again used. Both the air and water hose are at all times clear of the ground and particularly so when not in use, thereby protecting the hose and connections, and affording a clean method of filling the tires and supplying water to the radiator.

Model SB Air and Water Station.

Six feet six inches from ground to swivel casting. 12 feet, 6 inches total height. 17 feet reach with air hose, 7 feet reach with water hose. 7 feet, 6 inches from ground to top of globe.

SB

SD

‡**Model SB**—Base 10⅝x10⅝ inches square, 4-bolt holes 7-16 inches; 8½ inches center of bolt holes in base; 12 inch round globe with 6-inch base. Shipping weight 170 pound, globe 15 pounds. Each $90.00

One in a crate.

Model SC Air Station (Side Wall.)

Four feet, 8 inches from ground to center of wall plate; 5 feet from top of globe to end of hose arm; 12 inches from wall too center of body; 9 feet, 10 inches total height of air station; 17 feet reach with air hose.

‡**Model SC**—Wall plate 16 inches; 4—7-16 inch bolt holes; 9¼ inches center to center; 12-inch round globe with 6-inch bar. Shipping weight 150 pounds. Boxed. Globe 15 pounds. Each $80.00

One in a box.

Model SD Air and Water Station.

7 feet from ground to top of head; 12 feet, 6 inches total height to top of arm; 17 feet reach with air hose; 7 feet reach with water hose.

‡**Model SD**—Base plan same as Model SB. Shipping weight 200 lbs. Each $70.00

One in a box.

Model SE Air Station (Ceiling.)

25 inches from ceiling to bottom of air station; 17 foot reach with air hose on a 12 foot ceiling.

‡**Model SE**—Base plan 8x10 inches; 4 bolt holes 7-16 inch; 7½x4¾ inches center to center. Shipping weight 110 pounds. Each $55.00

One in a box.

Items marked thus ‡ not carried in stock; shipped direct from factory.

RAZORS

GENCO

Oval, black vulcanized rubber handle. Half concave, polished blade.

Henry X—⅝ in. honed point..... Per dozen, $32.00

Imitation shell handle, oval, with metal tips. Half concave blade, fine polish.

Henry XX —⅝ in. round point Per dozen, $38.00

Imitation ivory handle, oval, round ends. Extra full concave blade, highly polished.

Army and Navy—⅝ in. honed point..... Per dozen, $60.00

Imitation ivory handle, oval, with metal tips. Forged blade with oval tang, ground special concave, Genco polish.

Grant—⅝ in. honed point..... Per dozen, $45.00

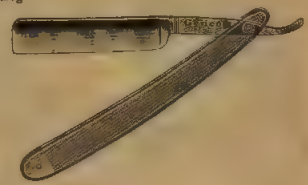
All above, one-half dozen in a box.

Heavy vulcanized black rubber handle, flat with beveled edges. Special concave blade, highly polished and etched in gold.

Master Cutler—⅝ in. honed point..... Per dozen, $45.00

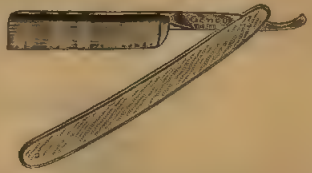
Transparent blue handle, flat, with beveled edges and round ends. Half concave blade, fine polish ,tang inlaid with imitation ivory

Bull Dog—⅝ in. round point..... Per dozen, $50.00



Transparent amber handle, flat, with beveled edges. Extra full concave blade, oval tang, highly polished with back and tang heavily gold plated.

Gold Seal ⅝ in. barber point Per dozen, $60.00



Imitation ivory handle, oval, with square ends and metal ornaments. Extra full concave blade, with wide bevel, flat tang and extra fine polish

De Roma—⅝ in. barber point..... Per dozen, $60.00

Imitation ivory handle, flat surface, beveled edges. Extra full concave blade with wide and stiff bevel, highly polished. Back and tang anti-rust finish.

Fluid Steel—⅝ in. barber point..... Per dozen, $60.00

All above one-half dozen in a box.

The Celebrated Geyser Electric Washer and Wringer

The World's Most Efficient Washer—Also Most Compact Ever Built

PRACTICAL GIFTS THAT BRING HAPPINESS

SAVE TIME—MONEY—WORRY!

The GEYSER ELECTRIC Washer and Wringer [illegible] YOU of the Hardest Work in the House. Does your wash in an hour or two at a cost of less than 4 cents for electricity.

Pays for itself in a short time and saves your clothes.

A [illegible] washer—also [illegible] as well as the most efficient. The unique PROPELLER principle of washing [illegible] PULLS, but rolls the suds [illegible] the suds back by SUCTION. This DOUBLE washing [illegible] sures quick, thorough washing without the wear on the clothes. The ENTIRE tank and cylinder space is used instead of one-third [illegible] half of it. As quiet in operation as an electric fan.

The reversible electric wringer swings to three different positions, making it unnecessary to move the cleaner during the entire washing and wringing operation.

The "Geyser" is of all metal construction, and all washer parts exposed to the water are [illegible] plated. The wonderful PROPELLER principle of washing will amaze you with its effective [illegible].

The Geyser is hard on dirt—easy on clothes. Does your washing and wringing in an hour or two at a cost of [illegible] than 4 cents for electricity.

THE MOTOR

A [illegible]-eighth horse power motor is used on all models except "Baby" Geyser, which is equipped with a motor of [illegible]-eighth horse power. The motor is mounted in a vertical position, on ball bearings, and is protected by a especially designed cast iron hood.

The vertically mounted motor is the most efficient manner of mounting, as there is much less friction and [illegible] the bearings [illegible] horizontal motors of the same type shows that the [illegible] horizontal motor [illegible] As vertically mounted by us the [illegible] bearings of the motor [illegible] cally no wear on the bearings. In horizontally mounted motors, after the bearings have become worn, the motor tends to shake and may even strike the field in which case new bearings are required. [illegible] motor [illegible] the washer in [illegible] Bearings.

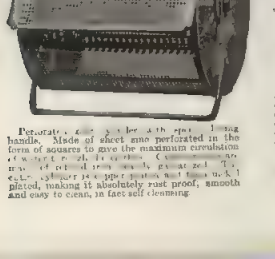
The board on which the motor is mounted is of hard maple impregnated with Minerallac, an insulating and waterproofing [illegible] and forms an insulator which will withstand very high voltages, thus giving perfect insulation between the motor and the washer frame. The motor is also insulated from the washer proper by means of a flexible insulating coupling between the motor and the propeller.

SOME POINTS OF "GEYSER" SUPERIORITY

No washer has ever been designed which possesses the distinct construction and sales advantages offered by the "Geyser". These advantages, most of which are **exclusive** "Geyser" features, should be understood thoroughly by the dealer and distributor as they give the "Geyser" representative a distinct advantage over those pushing the sale of other washers.

Some of the more important of these [illegible] are given below:

Illustrating one of the three wringing positions without moving washer

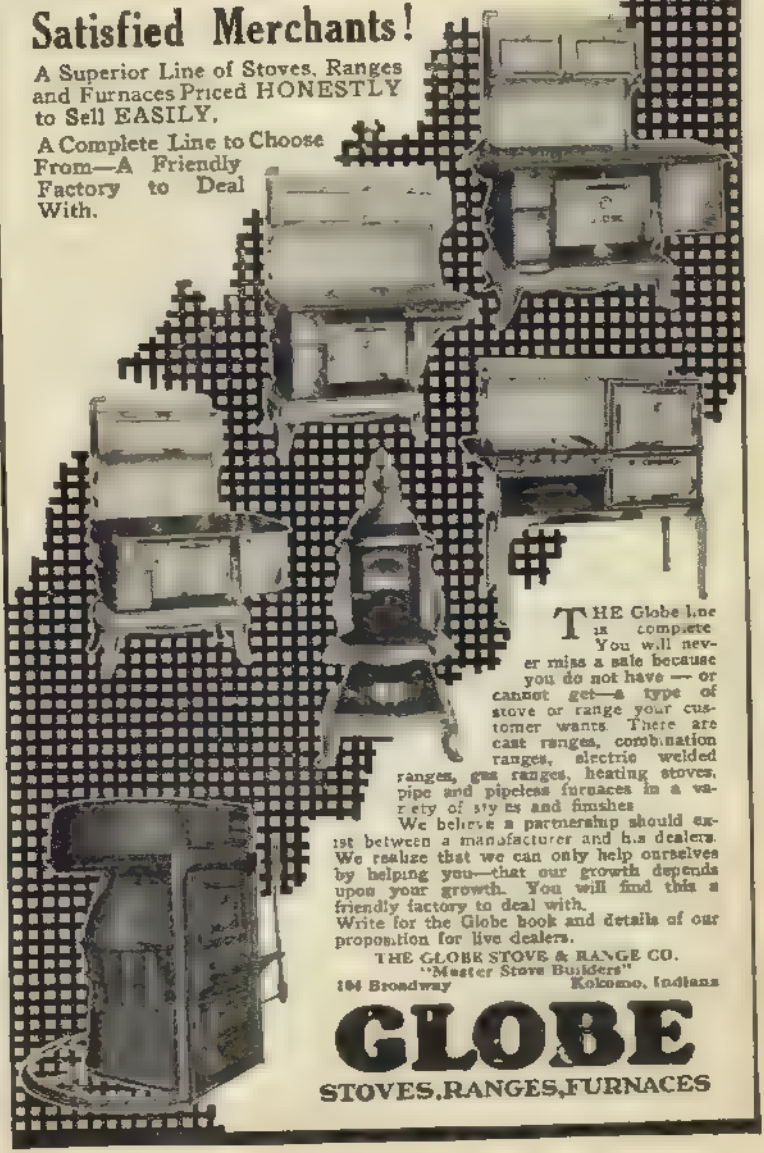


Perforated [illegible] handle. Made of sheet zinc perforated in the form of squares to give the maximum circulation of water [illegible] and [illegible] prevent [illegible] [illegible] [illegible]

GLOBE Dealers are Satisfied Merchants!

A Superior Line of Stoves, Ranges and Furnaces Priced HONESTLY to Sell EASILY.

A Complete Line to Choose From—A Friendly Factory to Deal With.



THE Globe line is complete. You will never miss a sale because you do not have — or cannot get—a type of stove or range your customer wants. There are cast ranges, combination ranges, electric welded ranges, gas ranges, heating stoves, pipe and pipeless furnaces in a variety of styles and finishes.

We believe a partnership should exist between a manufacturer and his dealers. We realize that we can only help ourselves by helping you—that our growth depends upon your growth. You will find this a friendly factory to deal with.

Write for the Globe book and details of our proposition for live dealers.

THE GLOBE STOVE & RANGE CO.
"Master Stove Builders"
104 Broadway Kokomo, Indiana

GLOBE

STOVES, RANGES, FURNACES

GOLDSMITH "PROFESSIONAL MODEL" FIELDERS' GLOVES

Fac Simile Signature of the Player's Name Embossed on Their Model Glove.
Used by the Big League Players.

The famous **Hans Wagner** glove. Made of the finest horsehide, waterproofed and oil tempered. Has special web fingers and ready-broke pocket. Finest kid leather lining with highest grade felt padding. Full laced wrist, allowing adjustment of padding to suit the wearer.

Model KB.
Each $7.50

Model KB.

Pat Duncan Model.

Of the Cincinnati Reds, uses this glove. A very large and roomy model that has that "comfortable "feel. Made of selected golden tan glove leather. Well padded in thumb and heel, lightly in palm. Laced wrist and leather welted seams.

No. B—Each..$6.00

Eddie Collins Model.

Made from specially selected black horsehide glove leather. Leather lined, welted seams. Well padded. padding to suit the wearer.

Nos. B and 72. Laced wrist for adjusting

No 72G—Each $4.00

Carl W. Mays Model.

Star pitcher of the New York Yankees. Is genuine drab, velvet finish horsehide. Full leather lined, with tan welted seams. Sewed with strong linen cord. Snug fitting and lightly padded in thumb, heel and little finger, producing a natural pocket. Laced wrist for adjusting padding.

Model XL—Each $7.50

Model XLL—Left hand players. Each .. 7.50

Model XL.

Nos. 69 and 57.

Chas. J. Hollocher Model.

Choice flexible buff chrome tanned horsehide. Leather lined throughout. Strongly stitched leather welted seams. Full laced wrist

No. 69—Each...$4.00

Professional Model.

Of best quality pearl glove leather. Full leather lined. Correctly padded to make a natural pocket. Full laced wrist to readjust the padding to suit the wearer. A glove that has the right "feel."

No. 57—Each $3.50

Adolp Luque Model.

Star pitcher of the Cincinnati Reds and leading pitcher of the National League. A large model. Made of specially selected soft oil tanned horsehide. Full leather lined. Specially constructed re-inforcement and laced between thumb and fore-finger. Correctly padded in thumb and heel, lightly in palm. A wonderful ready for use glove.

Model SF—Each $7.00

Model SF.

Full professional size, of buck tanned grained leather. Leather lined with good grade leather. Tan leather welted seams. Well padded. Leather laced wrist.

No. 43—Each $2.50

No. 43L—Left hand players. Each 2.50

No. 43

All above, one in a box.

FIRST — BECAUSE THEY — LAST

GOLDSMITH · · GUARANTEED ATHLETIC GOODS

Athletic Goods Are Used Wherever Baseball Is Played.

FIELDERS' GLOVES

Nos. 20 and 29.

Large size glove, oak tan colored sheepskin, black leather welted seams. Kid leather lining. Best felt padding. A serviceable glove.

No. 27 Each $2.00

No. 27L—Each 2.00

Large size glove of good quality oak tan dressed sheepskin. Welted seams. Leather lined palm. Best felt padding. A serviceable glove.

No. 20—Each $1.50

Nos. 14 and 17.

Large size glove, black leather palm and back. Soft, flexible felt padding arranged to make a ready broke pocket.

No. 17—Each $1.00

A glove for the small boy, tan leather palm, with leather lined palm. Felt padded.

No. 14—Each $0.75

No. 12—A glove for a small boy. Felt lined. Each.....$0.50

Frisch.

Ward.

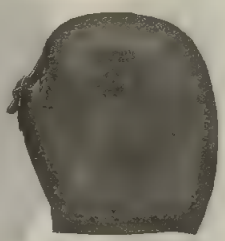
BASEMAN'S MITTS

Model CV—"Bull Dog." Light in weight. Extremely flexible. An especially designed model with a fielder's glove thumb. Best black quality oil finished horsehide. High grade felt pad. Full laced edge, double stitched seams. Has the patened wrist protector. Each...$8.00

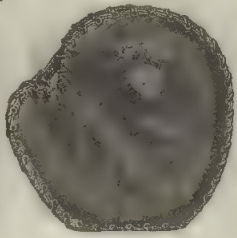
No. 153—Jake E. Daubert Model—A special model representing an unusual value. Palm and back are made of carefully selected horsehide. The felt pad is arranged to produce a ready formed ball-holding pocket. Edge fully laced. Goldsmith patented wrist protector. A well balanced mitt. Each $7.00

No. 132—A well shaped mitt of best quality oil tanned horsehide leather. Well padded with deep pocket. Full laced edge for adjusting pad. Double stitched thruout. Will give good service Each $4.00

No. 123—Full size Strong pearl chrome leather front and fingers. Back of black kid leather. Full laced edge. Leather strap and buckle at the wrist. Each $2.00



The "Bull Dog." Model CV and 132.



No. 153

No. 114—Full laced edge, oak tan leather palm and finger, back of good quality olive drab canvas. Leather buckle and strap. Each.....$1.50

BASEMAN'S MITTS

"Professional."

Model BK.

Model BK—The palm is made of highest grade cowhide; the back and fingers of selected horsehide. Special asbestos pad and Goldsmith patented "Hold-Fast" finger grips which insure a firmer grip. Fully laced for adjusting padding. Patented wrist protector. A wonderful mitt. Correct in design and perfect in material and workmanship.

Each $7.50

Showing Patent Wrist Protector

Late Style Mesh Bags

Gold and Silver Plated, Sterling Silver. Illustrations Reduced. Prices Each.

No. 1931 Silver Plated. Etched frame, 2⅝x7¼ in.... **$8.10**

No. 1932 Silver Plated. Engraved frame. Fancy bottom. 2⅝x7 in.....**$13.00**

No. 1933 Silver Plated. Etched frame. 2x7½ in.... **$8.80**
No. 1934 Gold Plated. Green gold finish **$17.00**

No. 1935 Gold Plated. Green gold finish, chased frame. Sapphire set clasp. 2⅝x9 in Price **$21.00**

No. 1936 Silver Plated. Etched frame, 4x6 in. **$8.10**
No. 1937 Gold Plated. Green gold finish, soldered mesh **$29.60**

No. 1938 Sterling Silver. Bright finish, soldered mesh, engraved frame. 4x4½ in Price **$54.00**

No. 1939 Silver Plated. Hammered frame 5x7 in. **$9.60**

No. 1940 Sterling Silver. Soldered mesh, chased frame. Sapphire set clasp. 2x7 in **$70.00**

No. 1941 Princess Mary, Silver Plated. Bright finish, fancy bottom 4x7½ in.....**$21.00**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

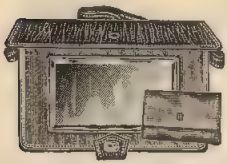
Ladies' Fine Leather Hand Bags

Best in Style, Workmanship and Durability. Illustrations Reduced. Prices Each.

No. 1942 Brown Gazelle Leather, moire silk lined, large nickel frame center compartment, two open pockets, block bottom shape with purse and mirror. 7½x5 . $8.80

No. 1943 Black Silk Grain Cowhide Leather, block bottom shape, silk moire leather lining, fancy nickel buttons, large nickel frame center compartment, two open pockets, purse and mirror 8¾x6 . . . $9.90

No. 1944 Black Pin Seal Grain Leather Pouch Bag, moire silk lining, silk cord handle, gold plated frame with Matrix Turquoise knob, inside purse attached to frame fitted with mirror Size. $8.90



No. 1945 Brown Chesterfield Leather, fancy button fastener, tan leather lined block bottom shape, large nickel frame center compartment, three open pockets, extra pocket with purse, large mirror attached Size 8x6. . . . . $11.60

No. 1946 Brown Crushed Calf Leather, Fancy button catch, silk lining, large size pocket with nickel frame two open pockets and one outside pocket Size closed 7x8 inches $14.00

No. 1947 Black Walrus Leather, tan pig grain leather lined, block bottom, frame center compartment, one open pocket fitted with full size mirror, outside handkerchief pocket and extra pocket and purse. Size 7½x6¾ $16.50

No. 1948 Black Cobra Grain Leather, tan leather lined, block bottom shape, fancy button fastener with large nickel frame center compartment, leather lined, two open pockets one with full size mirror, one with change purse Size, 8½x6 **$10.00**

No. 1949 Genuine Black Morocco Leather, block bottom shape, two side handles with metal loops, fancy button fastener on flap, large center compartment, damask leather lined, metal frame, two open pockets, purse and mirror Size, 9x7 **$13.80**

No. 1950 Black Cobra Grain Enamelled Leather, leather lined, fancy enameled button fastener, large metal frame pocket, three open pockets, extra large size mirror, change purse and comb. Size, 9½x6. .**$13.80**

Ladies' Fine Beaded Bags

No. 1951 Beaded Bag with carved ivory effect on celluloid frame, beautiful colors of beads in various designs, silk lined, fitted with mirror. Size closed, 6½x7. . . . . **$9.90**

No. 1952 Square shape beaded bag, shell colored celluloid frame, beautiful variety of beaded designs, silk lined, fitted with mirror. Size, 8x10. . . . . **$22.50**

No. 1953 Beaded Bag with celluloid frame in carved ivory effect, various shades of beads in fancy designs. Size 8½x7. **$14.85**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

Imitation Shell Belt Buckles, Barrettes and Bracelets

Assorted Colored Stone Settings. Illustrations Full Size. Prices Each.

No. 1104 Belt Buckle. Giant Grip. Assorted colored stone settings, any initial. Each $3.30

No. 1105 Belt Buckle. Giant Grip Assorted colored stone settings. Any standard emblem. Each..... $3.00

No. 1106 Belt Buckle Giant Grip. Assorted colored stone settings. Any two initials. Each $4.20
No. 1107 Any three initials..... $5.00

Hair Barrette. Assorted colored stone settings.
No. 1108 Ruby settings.
No. 1109 Blue sapphires.
No. 1110 Emeralds.
No. 1111 Topaz.
Each . . $1.40

Hair Barrette. Assorted colored stone settings:
No. 1112 Ruby settings.
No. 1113 Blue sapphires.
No. 1114 Topaz.
No. 1115 Emeralds.
Each 70c

Hair Barrette. Assorted colored stone settings:
No. 1116 Ruby settings.
No. 1117 Blue sapphires.
No. 1118 Emeralds.
No. 1119 Topaz.
Each $1.20

Hair Barrette. Assorted colored stone settings
No. 1120 Ruby settings.
No. 1121 Blue sapphires.
No. 1122 Emeralds.
No 1123 Topaz.
Each $1.20

Colored Stone Set Bracelets. Bracelets are colored to match settings.
No. 1124 Ruby Settings.
No. 1125 Amethyst Settings.
No. 1126 Blue Sapphire Settings.
No. 1127 Topaz Settings.
No. 1128 Emerald Settings.
No. 1129 White Stone Settings.
Each . . . $1.80

Hair Barrette. Colored Stone Settings.
No. 1130 Ruby Settings.
No. 1131 Blue Sapphires.
No. 1132 Emeralds.
No. 1133 Topaz
Each $1.20

Solid Gold, Gold Filled and Sterling Silver Thimbles

Specify Size Desired. Prices Each.

Solid gold.
Plain band.
No
1134 10k . $6.50
1135 14k . 9.70

Solid gold.
Engraved band.
No.
1136 10k. $ 7.20
1137 14k..... 10.35

Solid gold.
Rocco border.
No
1138 10k. . .$ 8.10
1139 14k..... 10.95

Solid gold.
Plain flange.
No.
1140 10k . . $ 9.00
1141 14k..... 11.40

No. 1142
Gold filled.
Chased band.
$3.60

No. 1143
Sterling silver.
Chased gold band.
$3.00

No. 1144
Sterling silver.
Chased rim.
50c

No. 1145
Sterling silver.
Faceted border.
80c

No. 1146
Sterling silver.
Chased band.
$1.00

No. 1147
Sterling silver.
Plain wide band.
$1.25

No. 1148
Sterling silver.
Festoon band.
Ribbed edge.
$1.50

No. 1149
Sterling silver.
Chased octagon band
$1.60

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

GORDON-VAN TINE CO.

DAVENPORT, IA. CHEHALIS, WASH. HATTIESBURG, MISS.

Miners' Cottages (Ready-Cut)
Superintendents' Homes Building Material

The five designs of miners' cottages shown at the right are carried in stock by us in large quantities at all times. Material for these five standard houses, ranging in size from three to six rooms, is all cut to fit in large quantities, and special prices are therefore available.

Gordon-Van Tine method of ready-cutting, which does all the intricate work of construction at the factory, enables you to use cheaper labor in building and get the work done in less time, thus reducing cost. Special prices on these standard Miners' Cottages will be quoted on lots of ten or more. Write or wire. Immediate shipment.

No 201 Dimensions 24x24 ft.
No 202 Dimensions 26x26 ft.

Better Homes for Superintendents, Engineers, Etc.

We also have more than 100 stock designs of homes of better class, suitable for superintendents, engineers, and other high paid employees. All material to build them carried in stock, and furnished either ready-cut or not ready-cut. Ask for catalog of "Gordon-Van Tine Homes."

No. 203
Dimensions 24x36 ft.

We Will Figure Material From Your Own Plans

We carry in stock at all times at our mills in the timber belts, and warehouses at strategic shipping points—lumber in regular yard lengths, immense stocks of doors, windows, finish and other millwork, as well as hardware, paints, roofing, etc. We will list all material from your plans, and quote you a wholesale, freight-paid price, and deliver you the highest quality of material on the shortest possible notice. We welcome orders for small miscellaneous lists of material, and give them the same careful attention as we do those for complete towns.

No. 204
Dimensions 20x30 ft.

Keep Our Catalogs on Hand—They Will Save Time and Money for You

(1) **Catalog of "Gordon-Van Tine Homes"** illustrates, describes and prices 200 designs of homes, cottages, etc. Explains complete Gordon-Van Tine ready-cut system which saves you time in cutting, saves material for you, and eliminates needless freight expense. Tells how a good boss and your own workmen, even though unskilled in carpentry, can put these houses up in half the time experienced carpenters, using hand saw methods, take.

(2) **Building Material Catalog.** This book illustrates, describes, and prices building material of every description, shipped direct in large or small quantities, at lowest wholesale prices. It will save time and trouble for you by enabling you to buy direct from one source, and secure carload freight rates on wholesale car lots.

These Catalogs Are Free. Ask for Them on Your Letterhead.

No. 205
Dimensions 24x36 ft.

SPECIFICATIONS OF HOUSES SHOWN AT RIGHT

All timbers and dimension lumber No. 1 Yellow Pine, cut to fit, bundled and stenciled according to plan. **Complete plans and directions** for constructing every house furnished free. **Roof Boards** No. 2 Yellow Pine, cut to fit. **Cornice and Porch Roof** No. 1 Yellow Pine drop siding, cut to fit. Roofing, standard slate-surface Jap-A-Top roll roofing, your choice of red or green. **Floors,** 1x4 No. 1 Yellow Pine. **All inside walls** lined with Blackhawk wallboard. **Inside finish,** clear Yellow Pine. **Doors,** glass front and rear doors. **Inside Doors** 5 x Panel Fir, 1⅜ inch thick. All doors mortised for locks. **Windows:** White Pine, four light windows, glazed with clear window glass. White Pine Frames cut to fit, and bundled. **Complete hardware** of all description furnished. **Two coats "Quality" paint** for entire exterior. Stain for interior woodwork. Boiled linseed oil for interior floors. **Scaffold lumber** and tar paper to cover finish, furnished free.

No. 210—Dimensions 18x22 ft.

Gordon-Van Tine Co.

ESTABLISHED 1865

Satisfaction Guaranteed or Money Back

Main Office—Davenport, Iowa

R. H. HAMILL COMPANY

HUNTINGTON, W. VA.

Building Contractors and Engineers

Housing Specialists for Thirteen Years

For thirteen years we have specialized on the construction of buildings for Coal Mine Plants, particularly dwellings in lots of 25 to 300, but including also Stores, Schools, Churches, Amusement Buildings, etc.

Services

Because of low overhead; because of an efficient organization, that in the building has required years, and because this organization has made a study of mining village construction, you will find it to your advantage to write us when developing mining properties.

The Above View Shows a Section of One of the Many Mining Villages Constructed by Our Organization.

Greenfield Tap & Die Corporation

Greenfield, Mass., U. S. A.

Little Giant Screw Plates

Assortments Nos. 1, 5 and 7 can be furnished with either USS or SAE standard threads.

Assortments Nos. 310, 311 and 312 contain both USS and SAE standard threads.

No.	1	5	7	310	311	312
	1/4	1/4	1/4	1/4	1/4	1/4
	5/16	5/16	5/16	5/16	5/16	5/16
	3/8	3/8	3/8	3/8	3/8	3/8
Cutting	7/16	7/16	7/16	7/16	7/16	7/16
	1/2	1/2	1/2	1/2	1/2	1/2
Sizes		5/8	5/8		9/16	9/16
		3/4	3/4		5/8	5/8
			7/8		3/4	3/4
			1"			7/8
						1"
List Price.	18.50	27.50	42.00	29.25	56.00	79.00

Adjustable Round Split Dies

GTD Adjustable Round Split Dies come in 11 outside diameter sizes ranging from 5/8" to 3". The cutting sizes range from 1/16" to 1½". USS threads furnished unless ordered otherwise. These are one piece dies, split on one side and adjustable for size with a small set screw as shown in the illustration.

GTD Hand Taps

GTD Hand Taps are famous for their uniform high quality and performance. Made of the best tool steel obtainable and carried in stock sufficient for the most exacting requirements.

Little Giant Wrenches for Pipe

Little Giant Pipe Wrenches are designed to have maximum strength. They are drop-forged, hardened and tempered and will give wonderful service. Owing to their simplicity (they have only 3 parts) there is nothing to break, no clumsy frame, no nuts, pins or springs. The design makes it possible to reach pipe, rods, nuts, etc. in ordinarily inaccessible places. *Little Giant* Wrenches are great time and money savers.

Size	List Price, Each	Takes Pipes To	Weight, Each	Packed in a Box
8"	$2.25	3/4"	13 oz.	6
10"	2.50	1"	1 lb. 4 oz.	6
14"	3.50	1½"	2 lbs. 7 oz.	6
18"	5.00	2"	4 lbs. 7 oz.	6
24"	7.25	2½"	7 lbs. 7 oz.	6

GTD Hinged Pipe Vises

Malleable iron with hardened and tempered tool steel jaws. Two lugs on base so the frame and hook can be reversed.

No.	List Price	Capacity in Inches	Wt., Lbs.
0	$3.60	1/8 to 2	5
1	5.00	1/8 to 2½	10½
2	7.50	1/8 to 3½	16
3	11.00	1/8 to 4½	24

GTD "T" Style Tap Wrenches

Solid or Ratchet type handles. Made of highest grade tool steel, capacities 1/16" to ½" taps.

Greenfield Tap & Die Corporation

Greenfield, Mass., U. S. A.

Little Giant Screw Plates

Assortments Nos. 1, 5 and 7 can be furnished with either USS or SAE standard threads.

Assortments Nos. 310, 311 and 312 contain both USS and SAE standard threads.

No.	1	5	7	310	311	312
	1/4	1/4	1/4	1/4	1/4	1/4
	5/16	5/16	5/16	5/16	5/16	5/16
	3/8	3/8	3/8	3/8	3/8	3/8
Cutting	7/16	7/16	7/16	7/16	7/16	7/16
	1/2	1/2	1/2	1/2	1/2	1/2
Sizes		5/8	5/8		9/16	9/16
		3/4	3/4		5/8	5/8
			7/8		3/4	3/4
			1"			7/8
						1"
List Price.	18.50	27.50	42.00	29.25	56.00	79.00

Adjustable Round Split Dies

GTD Adjustable Round Split Dies come in 11 outside diameter sizes ranging from 5/8" to 3". The cutting sizes range from 1/16" to 1½". USS threads furnished unless ordered otherwise. These are one piece dies, split on one side and adjustable for size with a small set screw as shown in the illustration.

GTD Hand Taps

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8"	$2.25	3/4"	13 oz.	6
10"	2.50	1"	1 lb. 4 oz.	6
14"	3.50	1½"	2 lbs. 7 oz.	6
18"	5.00	2"	4 lbs. 7 oz.	6
24"	7.25	2½"	7 lbs. 7 oz.	6

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Malleable iron with hardened and tempered tool steel jaws. Two lugs on base so the frame and hook can be reversed.

No.	List Price	Capacity in Inches	Wt., Lbs.
0	$3.60	1/8 to 2	5
1	5.00	1/8 to 2½	10½
2	7.50	1/8 to 3½	16
3	11.00	1/8 to 4½	24

GTD "T" Style Tap Wrenches

Solid or Ratchet type handles. Made of highest grade tool steel, capacities 1/16" to ½" taps.

GULICK-HENDERSON CO., INC.

NEW YORK PITTSBURGH CHICAGO

Inspection, Analysis, Test and Investigation of All Kinds of Known or Unknown Materials

To the Producer of Coal:

What Does Your Coal Analyze?

It is highly important that you have analyses of your product to show prospective purchasers as well as for your own information. You want credit for all the merit your product entitles you to and to protect yourself against unfounded complaints.

The analyses should be made by a Laboratory of high standing and widely known reputation, as this adds to the strength of the results. The ordinary analysis consists of

Moisture,
Volatile Matter,
Fixed Carbon,
Ash,
Sulphur,
Phosphorus.

In addition to these we also determine the BRITISH THERMAL UNITS (B. T. U.) and the Fusing Point of the Ash. Knowledge of this Fusing Point enables the user to understand the Clinkering or Non-clinkering qualities of the coal. This is a new and highly important test.

We make mineral analyses of Water to determine its suitability for Boiler use, and furnish information for correction when necessary. We also make sanitary analyses and bacteriological examinations to determine fitness for drinking.

To the Consumer of Coal:

What is the Analysis of the Coal You Are Using?

The consumer should be even more concerned as to the quality of the Coal being used than the producer. Our booklet, "Uncle Walt Mason's Remarks" on coal will add force to this declaration. Ask us for a copy. It is free. It shows in a humorous, but highly pertinent manner, the necessity for **"knowing"**.

We are specialists in fuel determination and are continually "checking" with the chief independent laboratories of the country, as well as with the laboratories of the consumers. During the past twenty-five (25) years we have made thousands of analyses on the coals and cokes of Pennsylvania and other coal fields. We make inspections and samplings of coal and coke at points of production for both foreign and domestic shipments; also, umpire samplings for adjustment of controversies; consultation, investigation and advice as to the best and cheapest coal for consumers' requirements.

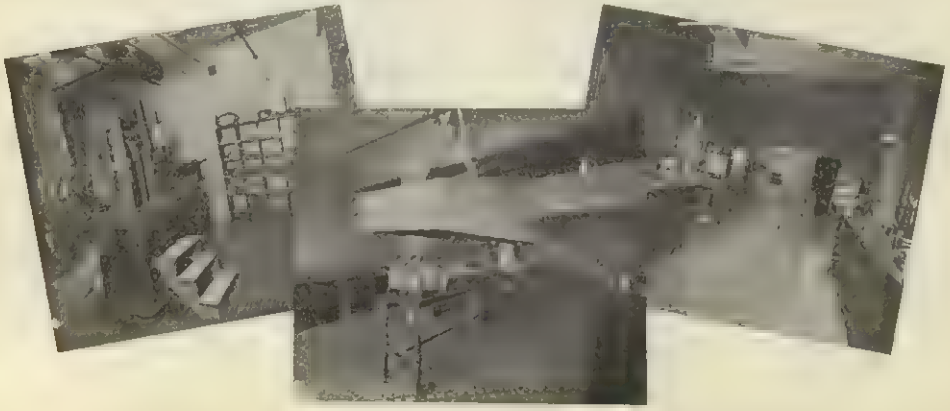
Special Service

Examination of undeveloped coal lands, developed, operating or idle mines, giving geological and economic reports with detailed descriptions, photographs, maps, etc., etc., with investigations and samplings of coal, recoverable tonnage, economical production, proper preparation, best uses of product and proper selling markets. Mine samplings for improvement of product, either as coal or for coke. Coke yield, ash and phosphorus content and sulphur elimination determined in terms of coke from coal.

Research and General Analyses

In our research department we are prepared to investigate any problems. We analyze Fire Clay, Brick, Cement, Limestone, Sand, Mine Gas, Natural Gas, Gasoline content of natural gas, Oils, Paint, Iron, Steel, Brass, Bronze, Babbitt, Alloys, Drosses, Ores of Iron, Manganese, Copper, Tungsten, Molybdenum, Chrome, Titanium, Gold, Silver, etc., etc.

We also make analysis of glass and of the materials used in its manufacture.



Views of Our Laboratory at Pittsburgh, Pa., Showing Completeness of Equipment.

A New Candy Prize Package

"Sweeties" a suitable package for Concessionnaires, Park Men, Punch Board Operators, etc., who use a give away package

A new candy prize package. Good for resale purposes. Very attractive because it is printed in very pretty colors. The box measures 6¾x2¾x1 inches. Each box contains five pieces of good chewing molasses candy and a prize or toy that will please a girl or boy. The prizes used consist of many different styles such as rings, lanterns, pipes, tops, auto, etc. "Sweeties" are packed 250 to a carton; no less sold.

No. A8160. Per thousand (4 cartons)..... **17.00** | Per carton (250 pkgs.)..... **4.50**

Chewing Gum for Concessionnaires

Our Special Chewing Gum. A good reliable make in popular spearmint flavor. Packed 2 sticks in fancy lithographed wrapper without price label; packed 100 packages in a box. The sticks are full standard size, especially designed for cane rack and baby rack men.

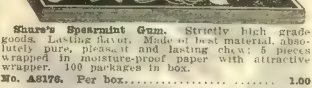
No. A8173. Per box..... **.50**

Chewmore Gum. A pleasant and highly flavored gum, sold piece wrapped in paper with printed label, 100 packages in box. For cane rack, baby rack, salesboards, etc.

No. A8175. Per box..... **.75**

Shure's Spearmint Gum. Strictly high grade goods. Lasting flavor. Made of best material, absolutely pure, pleasant and lasting chew; 5 pieces wrapped in moisture-proof paper with attractive wrapper. 100 packages in box.

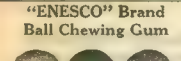
No. A8176. Per box..... **1.00**



Meadowbrook Spearmint Chewing Gum, a fine quality, made of high grade material and lasting flavor. Each stick wrapped separately in moisture-proof paper and wrapper 5 sticks in attractive package, 20 packages in a box.

No. A8177. Per box..... **.30**

"ENESCO" Brand Ball Chewing Gum

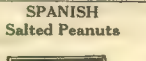


Quality Ball Chewing Gum, candy coated, sizes are regular; every one is round, no trouble in vending machines. Made of good materials, delicious flavor, lasting and pleasant to the taste. Comes in assorted flavors and colors 100 in a box. 100 boxes in case.

Per box..... **.25**

No. A8195. Per case..... **24.00**

SPANISH Salted Peanuts



Salted Peanuts, absolutely fresh, always popular. Our prices enable you to make excellent profits; guaranteed clean, fresh goods Packed 10 lbs. in sealed wooden box. No less sold.

No. A8150. Per box..... **1.25**

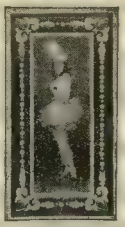
"LION" BRAND Molasses Kisses

Wrapped Molasses Kisses, a great favorite chewing candy. Each wrapped in paper. Average about 66 kisses to a pound. 30 pounds in a corrugated box. No less sold.

No. A8164. Per box of 30 lbs. **2.50**

Golden Brown Chocolates

In Brown Built Boxes



The chocolates are of a fine quality hand dipped, thickly coated with rich mellow chocolate, assorted flavor cream centers, each piece in paper cup, placed in partitioned box.
The boxes are the big flash with very attractive raised and embossed figures in six colors.

No	Size of box	No. of Pieces	Per Box	No.	Size of box	No. of Pieces	Per Box
A7930	9⅛x4¼	15	.25	A7932	15½x6½	40	.68
A7931	11 x6¾	26	.40	A7933	23⅝x9½	90	2.00

High Grade Chocolates in Fancy Boxes

Temptation Chocolates. The well known brand of creamy quality chocolates needs no description as they are popular throughout the country. Assorted bitter sweets with rich cream centers. Pink color box tied with ribbon and wrapped in glassine paper. ½ dozen in a carton. No less sold.

No. A8133—½ lb. box—Per dozen **3.25**
No. A8134— 1 lb. box—Per dozen **5.75**

The Famous Allegretti Bitter Sweet Chocolates. Rich cream centers, flavored with true fruit juice, maple, vanilla and many other popular kinds. All made from the purest of ingredients. Each piece is hand-dipped in rich cocoa chocolate.

No. A8130. ½ lb. box, 1 doz. in carton.
Per doz. **2.75**
No. A8131. 1 lb. box, ½ doz. in carton.
Per doz. **4.75**

Florence Quality Chocolates

LARGE SIZE SHOWY BOXES

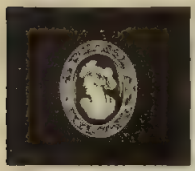
The ½ lb. box looks like a one pound and the one pound box looks like a two pound.

The Popular Florence Assorted Chocolates with rich cream centers, nougats, caramels and bitter sweet creams all assorted in the box. The boxes look like one and two pound sizes. The half pound box measures 8¾ inches long and 4½ inches wide and 1⅝ inches deep. The one pound box measures 10½ inches long, 6½ inches wide and 1⅝ inches deep. Boxes are covered with pink embossed paper, printed as illustrated and wrapped in glassine paper. These chocolates are suitable for paddle wheel men, carnival workers and also for resale purposes. Put up in the two following sizes only:

No. A8135. (½ pound size). Per dozen..... 2.85
No. A8136. (1 pound size). Per dozen..... **4.70**

EXTRA QUALITY FINE SOLID GOLD BROOCH PINS

PRICES EACH



Fine pink cameo, English finish artistically hand engraved, safety catch

No. J8145 ..... **$9.50**

Fine pink shell, white cameo, two open ends, English finish, green gold mats, 4 half pearls, 1 large pearl border, safety catch pendant top ring

No. J8146 ..... **$13.00**

Fine pink shell, white cameo, fancy open work, English finish, green gold ornaments, 12 half pearls, 2 large pearls, safety catch, pendant top ring.

No. J8147 ..... **$13.00**

Fine pink shell, white cameo, English finish, artistically hand engraved, safety catch, pendant top ring

No. J8148 ..... **$14.50**

Fine white cameo, French finish, artistically hand engraved, safety catch, pendant top ring

No. J8149 **$10.00**

Fine pink shell cameo, English finish, green gold mats, hand engraved, safety catch, pendant top ring

No. J8150 **$18.25**

Fine pink shell cameo, English finish, 12 pearl border, hand engraved, safety catch, pendant top ring

No. J8151 ..... **$21.50**

Fine pink shell cameo, English finish artistically hand engraved safety catch

No. J8152 ..... **$18.75**

Fine pink shell, white cameo, English finish, artistically hand engraved, safety catch, pendant top ring

No. J8153 ..... **$26.50**

Fine pink shell cameo, English finish artistically hand engraved, safety catch, pendant top ring

No. J8154 **$31.75**

FINE GOLD FILLED and STERLING SILVER BROOCHES

QUALITY GUARANTEED
PRICES EACH

Gold filled, polished chased, genuine coral set.

No. J8155..... **$1.50**

Gold filled, English finish fancy open work, fine ruby center, 2 brilliants

No. J8156..... **$1.50**

Gold filled, Roman finish.

No. J8157..... **$1.00**

Gold filled, Roman finish

No. J8158..... **$0.50**

Gold filled, roman finish, green gold leaves, 5 amethysts.

No. J8159..... **$2.75**

Gold filled, Roman or polished finish, fine opal set.

No. J8160..... **$2.50**

Gold filled, Roman and green rose gold finish, ruby stone set.

No. J8161..... **$1.75**

Gold filled, Roman and green gold finish, 1 ruby and 8 brilliants.

No. J8162..... **$2.00**

Sterling silver, polished alternate blue sapphire and brilliant set.

No. J8163..... **$4.75**

Gold filled, polished finish, fine genuine cameo set

No. J8164..... **$6.00**

Finest and Richest Genuine Hand Painted China

Master hands and extreme care, combined with the best workmanship and execution by skilled artists, enter this work. We Guarantee the Highest Quality of Gold being used for Decoration. The Acme of Perfection. None Better. Prices Extremely Low.

ILLUSTRATIONS ARE REDUCED SIZE.

BOWL

Very attractively etched in gold. Ebony black body. Gold border and trimmings. Diameter 6 inches. A new decoration that is extraordinarily rich in appearance.

No. 3E1800 6 Bowl Each $11.20

CANDLESTICK

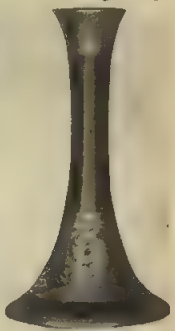
Height 6¼ inches. Same design as one illustrated in No. 3E2001 for 6 lights.

No. 3E1493 Each **$7.00**

FOOTED BOWL

A new decoration that is taking a great deal of attention. Has beautiful raised enamel gems in gold and also black or red gems which greatly adds to the ordering. Heavy gold border and trimmings. Diameter 9¼ inches. Height 5 inches. Chrysanthemum design in center. Makes an attractive console or buffet decoration.

No. 3E2001 Each..... **$19.60**



CANDLESTICK

Height 10 inches. Same decoration as bowl No. 3E2000, at left.

No. 3E1400 Each **$11.20**

VASES

Raised gold. Black or red body. A marvelous new creation. Gold border and trimmings. Choice of three sizes.

No.	Height	Each
3E1702	10-inch.....	$12.00
3E1702 1	8-inch	7.80
3E1702 2	6-inch	5.80

COVERED URN

Very artistically etched in gold which is heavily applied. Gold border and trimmings. Black or red body. Height 9½ inches.

No. 3E1712 Each ..... **$11.**

VASE

A most exquisite etched design in gold with exterior in black or red body. Gold border and trimmings. The gold is neatly and heavily applied. Height 7 inches.

No. 3E1654 Each **$9.80**

VASE

An attractive design in Lucinda and gold hand decoration. Heavy gold border and trimmings with conventional Forgetmenot in center. An exclusive design. Height 8 inches.

No. 3E2303 Each **$10.50**

VASE

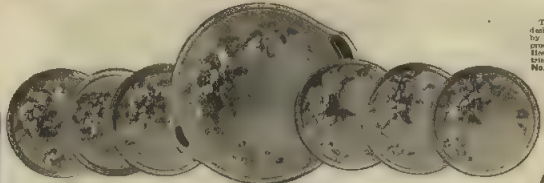
This is a magnificent Lusdasapo design. The work is accomplished by master hands and as a finished product, is greatly to be admired. Heavily applied gold borders and trimmings. Height 8½ inches.

No. 3E1852 Each **$11.90**

VASE

Beautifully gold etched as illustrated. Mocrish red body. Gold border and trim. Height 11 inches.

No. 3E1720 Each **$14.00**



SEVEN PIECE CAKE SET

So appropriate for an afternoon luncheon. Also ornamental and decorative in the dining room. Set consists of one 10-inch large handled cake plate and six 6-inch round plates to match. Choice of Forgetmenot, wild roses or floral decorations. Heavy gold border and trimmings. Have pure white heavily applied gold open handles. Work is masterly executed on high grade china blanks.

No. 3E1440 Seven Piece Cake Set complete set **$22.40**

VASES

Blue crystal suede gold veined. Heavy gold border and fine entire new design.

No.	Height	Each
3E1650	12½ inches	$13.60
3E1650A	11½ inches	11.20
3E1650B	8 inches	8.40

LEMONADE JUG

LEMONADE MUG

This Lemonade Jug and Mug Set to match is decorated in the popular Forgetmenot design. Has [illegible] gold handle. Jug is [illegible] inches high and mug [illegible] inches high. Work expertly executed on high quality china blanks.

No. 3E1100 Two pieces **$16.80**

No. 3E3101 Lemonade Mug each **4.65**

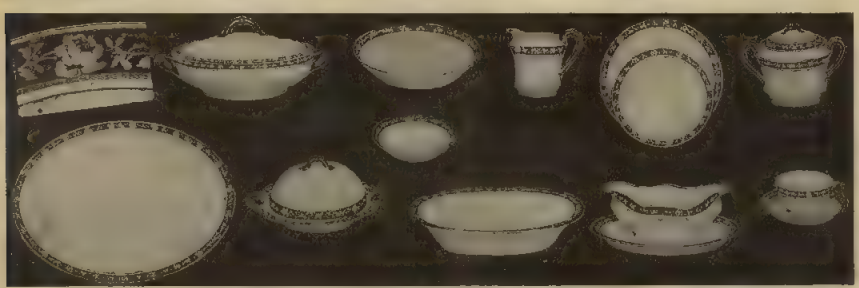
Very High Grade Imported China Dinnerware

ALL ARE STRICTLY FIRST CLASS SELECTED BLANKS POSSESSING THE CHARACTER, RICHNESS AND EXCELLENCE PREVALENT IN HIGHEST QUALITY DINNERWARE

Work executed with remarkable skill and care by the best known artisans. Highest quality of gold used for decorations which is heavily and neatly applied.

This magnificent dinnerware is obtainable with or without initial. With initial you have choice of one, two or three letters. Separate pieces furnished at following prices:

No.	Articles	Gold Band and Hairline	Gold Band and Hairline 1 Letter	Gold Band and Hairline 2 Letters	Gold Band and Hairline 3 Letters
3E20	Dinner Service Plates, diameter 9½ inches, per dozen	$33.35	$38.70	$41.35	$44.00
3E21	Breakfast Plates, diameter, 8½ inches, per dozen	30.70	36.00	38.70	41 35
3E22	Tea Plates, diameter 7¼ inches, per dozen	25.35	29.70	32.00	34.70
3E23	Bread and Butter Plates, diameter, 6 inches, per dozen	16.70	22.00	24.70	27.35
3E24	Soup Plates, diameter, 8¼ inches, per dozen	29.35	36.00	38.70	41 35
3E25	Sauce Dishes, diameter, 5½ inches, per dozen	16.70	22.00	24.70	27.35
3E26	Tea Cups and Saucers, per dozen	32.00	37.35	40.00	44.00
3E27	Open Vegetable Dish (round), diameter, 9 inches, each	6.00	6.70	7.35	8.00
3E28	Open Vegetable Dish (oval), length, 9¼ inches, each	6.00	6.70	7.35	8.00
3E29	Covered Vegetable Dish (oval), length, 1.. inches, each	14.00	14.70	15.35	16.00
3E30	Covered Vegetable Dish (round), diameter, 10½ inches, each	14.00	14.70	15 35	16 00
3E31	Platter (oval), length, 12 inches, each	7.85	8.50	8.55	9.20
3E32	Platter (oval), length, 16 inches, each	12.15	12.95	13.60	14.30
3E33	Covered Butter Dish, each	7.75	8.30	8.70	9.35
3E34	Gravy Boat, each	10.00	10.70	11 35	12.00
3E35	Sugar and Creamer, 6 Tabs, per set	8.40	9.35	10.50	10.70
3E36	Pickle Dish, each	4.00	4.30	4.70	5.35



RICH GOLD, BEAUTIFULLY ETCHED, ¾-INCH WIDE BRIDAL ROSE DECORATION

Illustration in upper left hand corner shows full size decoration.

SEPARATE PIECES FURNISHED AS FOLLOWS

ARTICLE			ARTICLE	
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No. 3E39	Bread and Butter Plates, diameter, 6 inches, per doz.	30.70	No. 3E47	Platter, length, 12 inches, each 11.10
No. 3E40	Sauce Dishes, diameter, 5½ inches, per doz	30.70	No. 3E48	Platter, length, 16 inches, each 17.35
No. 3E41	Coup Soups, diameter, 8¼ inches, per doz	48.00	No. 3E49	Pickle Dish, each 4.70
No. 3E42	Tea Cups and Saucers, 6 Tabs, per doz	53.35	No. 3E50	Sugar and Cream, per set 10.70
No. 3E43	Covered Vegetable Dish (round), diam., 10½ in., each.	20.00	No. 3E51	Gravy Boat, each 12.00
No. 3E44	Covered Vegetable Dish (oval), length, 12¼ in., each	20.00	No 3E52	Butter Dish, each 10.00

SPECIAL OFFER REMARKABLE INDUCEMENT

At a tremendous saving and just above importation cost we are offering to our trade this Magnificent and Lovely 100 Piece Complete Dinnerware Set

No. 3E100 Complete 100-Piece Dinnerware Set, as above **Especially Priced** **$335.00**

Finest and Richest Genuine Hand Painted China

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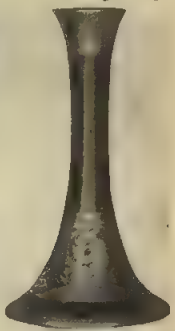

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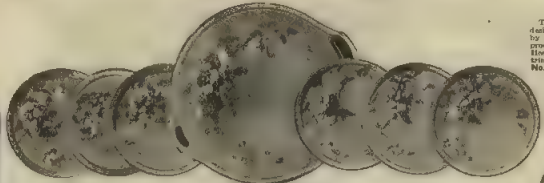

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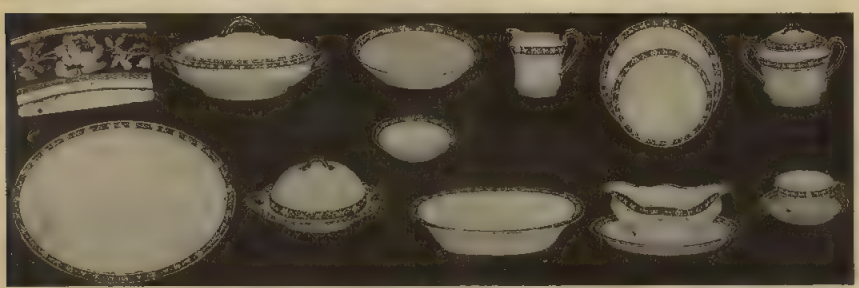

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No. 3E100 Complete 100-Piece Dinnerware Set, as above **Especially Priced** **$335.00**

All it needs is a chance to sell

One of these stands will be furnished free to any dealer ordering the following assortment. Ask for it:

Two 8-inch wrenches
Three 8-inch Wrenches
Three 10-inch Wrenches
Three 14-inch Wrenches
One 18-inch wrench (Steel Handle)

HERE'S a salesman that costs you nothing to hire, that works every minute and that rings up sales for every size of Walworth Stillson Wrench in your stock.

Every customer of yours who knows tools knows the genuine Walworth Stillsons are good wrenches. This display stand on your counter, in your window or hung up on the wall will remind them again and again that you've got Walworth Stillson wrenches in all the sizes they need for any kind of job.

To get one of these stands free, order the wrench assortment listed above from your regular source of supply, and ask for the metal display stand "as advertised in Hardware Buyers Catalog & Directory." Then your supply man will know just what you want

WALWORTH MANUFACTURING COMPANY, Boston, Mass.

Chicago—Cleveland—Glasgow—Kewanee, Ill.—London—New York—Philadelphia—Portland, Ore. San Francisco—Seattle—Youngstown. Plants at Boston, Mass., and Kewanee, Ill.

WALWORTH INTERNATIONAL COMPANY, NEW YORK, FOREIGN REPRESENTATIVE

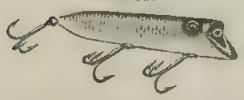
WALWORTH

Stillson TRADE MARK STILLSON REGISTERED U.S. PAT. OFF. *Wrench*

CASTING & TROLLING BAITS

ARTIFICIAL MINNOWS

Heddon's "Head-on Basser" Minnow.



It darts and swims in an irregular way. Very erratic in action but equally positive in results. Will run from one to three feet below the surface when retrieved. Floats when at rest. Has made wonderful records bass, pickerel and muskellonge. Equipped with three treble hooks, non-rotating hook fasteners, eyes, and full Heddon finish. Weight ⅝ ounce, length over all 4¼ inches.

Nos.	Finish	Dozen
8500	Fancy green back	$10 20
8501	Rainbow	10.20
8502	White body, red head and tail	10.20
8509D	Green scale finish	10 20
8509P	Shiner, scale finish	10.20
8509S	White, spotted	10.20

One in a box.

Vampire.

The Vampire is Heddon's latest bait. Flat-nosed to resemble a Baby Pike and beautifully enameled in natural fish colorings, it is a lure that few fish can resist. Three treble gangs of sharp barbs make it a sure-hooker. The Pike shaped nose causes it to dart through the water like a live fish. The speckled golden greens and scaly yellows blending into the silver white of the belly give it the appearance of a live baby minnow. The porcelain finish is guaranteed not to crack or peel.

Weight ⅝ ounces, length 4½ in.

No. 7500S—White body, red and green spots. Per dozen.....$12.00

No. 7501—Rainbow. Dozen. 12.00

No. 7502—White body, red eyes and tail. Per dozen 12.00

No. 7509D—Green scale finish. Per dozen $12.00

No. 7509M—New pike scale. Per dozen 12.00

PORK RIND MINNOWS

Heddon-Stanley. Weedless.

The Heddon-Stanley Weedless Pork Rind Minnow is positively the last word in Pork Rind Baits, absolutely weedless and snagless. Body made of pyralin; weight, about 5 ounces; length over all 3½ inches. Stanley type double spinner.

Specially designed and patented for pork rind, length 2¾ inches, with slits on the sides, giving life-like movement, also practically non-fouling.

No. 72P—Red top, white bottom, plain. Per dozen.....$12.00

No. 79DW—Green scale, weedless. Per dozen 15.00

No. 72W—Red top, white bottom, weedless. Per dozen..... 15.00

No. 79MW—Pike scale, weedless. Per dozen 15.00

No. 79PW—Shiner scale, weedless. Per dozen 15.00

Surface Attachment.

Surface attachment (readily affixed to bait by split ring) causes it to ride the surface with a skittering effect.

Surface Attachment—Dozen...$1.80

Heddon's Feather Tail Minnow.

This new feather tail lure is a sure getter—a sporting killer bound to awaken the unstinted praise of any angler. Sinks rapidly and the combination of spinner and feather is very effective. Practically weedless, it is ideal for use in lily pads and weeds where the big ones lie. Equipped with No. 3-0 O'Shaughnessy hook. Length of body 3 inches overall; length of feather tail. 2¼ inches. Weight, each, ⅓ ounce.

No. 42—Red and white. Per dozen $12.00

No. 49G—Black body, orange tail. Per dozen 12.00

No. 49P—Shiner scale, with gray tail. Per dozen..... 12 00

No. 49M—Pike scale, green and yellow tail. Per dozen..... 12.00

Heddon's Game Fisher Minnow.

Flexible, triple acting body-liveliness that outnatures nature. Floats while at rest, runs deep when retrieved, casts easily. This lure is sturdily built to withstand the most savage attacks of large game fish. Equipped with two trebles. Length of body, 4¾ inches. Weight, each, ¾ ounce.

No. 5501—Rainbow. Dozen..$15.00

No. 5502—White body, red head and tail. Per dozen 15.00

No. 5509D—Green scale. Per dozen 15.00

No. 5509P—Shiner scale. Per dozen 15 00

Heddon's Dowagiac Minnow.

Have two spinners and five extra Dowagiac design nickel plated treble hooks. Weight, approximately 18 dwts.; length of body 3¾ inches.

Nos.	Finish	Dozen
150	Fancy green back, white belly	$12.00
151	Rainbow colors	12.00
154	Red body with dark green back	12.00
159A	Yellow perch	12.00
159B	Frog colors	12.00

King Wiggler.

The King wiggler is made of brass 3¼ inches long with a red head and nickel-plated body. It weighs about an ounce. Being hollow, it floats when not in motion. In action it has that minnow-like movement and travels at from six to twelve inches below the surface of the water at the average speed of reeling. It is suitable for either trolling or casting.

King wiggler—Per dozen....$12.00

One in a box

Peerless Assortments.

This very desirable card or assortment of minnows consists of 4 each of the following blended colors and in 2½ inch size

No. 4194—White belly, green back.
No. 4195—White belly, red back
No. 4180—White belly, white enamel over all.

All coated with a special elastic, waterproof indestructible, porcelain enamel and mounted with three nickel plated detachable treble hooks, spinners and connections All neatly displayed on 12x12 inch heavy card, one card in a fancy box

Peerless—Per assortment $4.00

PRODUCERS DISTRIBUTING CORPORATION

Helene Chadwick in "Trouping with Ellen"

THE stage and the life of the people "behind the scenes" have a lure and fascination that is irresistible. When contrasted with the butterfly existence of the exquisite society debutante, the highlights of dramatic contrast are intensified and quickened.

In "Trouping With Ellen" beautiful Helene Chadwick plays the role of a chorus girl who renounces the luxury of a perfumed society boudoir for grease paint and a Broadway dressing room. "Trouping With Ellen" is an adaptation of the *Saturday Evening Post* story by Earl Derr Biggers, and is one of the finest pieces of fiction written by that popular author, whose "Seven Keys to Baldpate" was a literary and dramatic sensation.

Miss Chadwick, who, prior to her debut as a screen actress, was the most photographed girl in America, being known as "The Girl on the Magazine Cover," "The Harrison Fisher Girl" and "The Perfect Type of Beautiful American Womanhood," has earned an enviable position on the screen

T. Hayes Hunter, who directed "Earthbound," directs Miss Chadwick in "Trouping With Ellen."

And "Her Own Free Will"

Here is a gripping drama of a masterful man and a headstrong yet warm hearted woman—and the great conflict of their wills

Destiny weaves her thread in a strange and powerful manner in this gripping photoplay, and the denouement is unexpected and startling.

"Her Own Free Will" is the screen version of the story by Ethel M Dell, directed by Paul Scardon

A dramatic situation in "HER OWN FREE WILL"

A few of the distinguished cast

Alluring Helene as NAN EVERARD, tantalizes her husband.

Produced by EASTERN PRODUCTIONS, Inc. **Foreign Distributor: Wm. Vogel Distributing Corp.**

SEASON 1924-25—THIRTY FIRST-RUN PICTURES

boys! don't be just a SILENT WATCHER *when it comes to booking*

FRANK LLOYD PRODUCTIONS INC
presents
The SILENT WATCHER
with
GLENN HUNTER BESSIE LOVE
HOBART BOSWORTH
MARY ROBERT'S RIENHART'S "THE ALTER OF THE ..."
Directed by FRANK LLOYD

If you do you'll be sorry! It's a wonder! Frank Lloyd has done it again! It sizzles with box~office power.

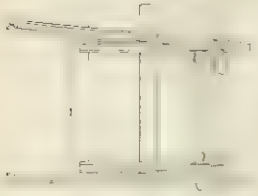
Again!~and again!~and again! we're showing you that the greatest buy in the world is a **FIRST NATIONAL CONTRACT**

HELMICK FOUNDRY-MACHINE CO.

EIGHTH STREET FAIRMONT WEST VIRGINIA

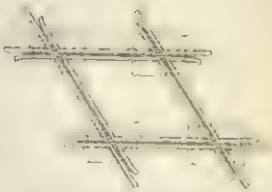
Manufacturers of

Frogs, Switches, Crossings, Track Equipment

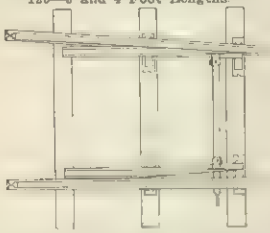


Standard Split Switch, Design No. 120—3 and 4 Foot Lengths

Standard Split Switch, Design No. 122—7 and 8 Foot Lengths.



Solid Angle Crossing, Design No. 132 Made to any required angle.



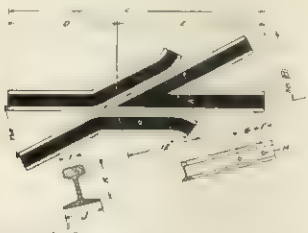
Standard Split Switch, Design No 121—5 and 6 Foot Lengths

Riveted Plate Frog, Design No. 12.

Frog illustrated above is constructed of steel plate and rails securely riveted together. It is a strong, rigid construction found necessary for efficient service in coal mines. Made in 16 to 60 pound rail sizes and number desired.

Switch Connections and Throws.

No. 100—Spring Switch Connecting Bar
No. 101—Standard Plain Connecting Bar.
No. 102—Standard Ground Throw with Spring Link.
No. 103—Standard Ground Throw with Plain Link.
No. 104—Automatic Spring Throw and Link.
No. 105—Horizontal Parallel Throw and Link.



Information Desired

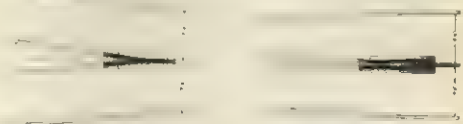
When ordering Frogs and Switches it is necessary that you give the weight or dimension of the rail, gauge of track and number of frog or center radius of curve. If you cannot give above data you may give the measurements as designated on sketch herewith.

Spread 12" from point	A
Spread at heel	B
Length over all	C
Length point to toe	D
Length point to heel	E
Distance center of first hole	F
Distance center to center hole	G
Diameter of holes	H
Width of rail at head	I
Width of rail at base	J
Height of rail	K

Extra Order Forms Furnished When Desired.

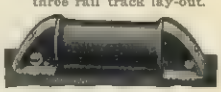
Light Rail Turnout, Design No. 132

Complete frog and filler rails with switch points, made of 12, 16 and 20 pound steel rails, Nos. 1½ and 1¾ Frogs, also in any other practical desired radius



Special Riveted Plate Frog, Design No. 125—For three to four rail track lay-out.

Special Riveted Plate Frog, Design No. 124—For two to three rail track lay-out.



Chilled Cast Iron Track Rollers

Made in 6" and 12" lengths. Stands have oil reservoir around bearing and are so designed that the rope will slide over stand on to face of roller.

Sheave No.	Stand No.	A Inches	B Inches	C Inches	E Inches	F Inches
B117	B135	9.00	10 50	4.00	1.50	6 00
B120	B121	9.00	10.50	6.00	1.50	9.00
B66	B134	10.50	12.00	4.00	1.75	6 00
B123	B119	10.50	12.00	6.00	1.75	10 62
B64	B111	13 50	15 00	4 62	1 75	6 00
B142	B151	6 00	12 00	6—0	1 75	7 50
B326	B237	9 00	16 50	12 00	1 75	15 00

FROG AND SWITCH DATA

No. Frog	Spread Per Foot	Frog Angle	RADIUS CURVE IN FEET Gauge 3' 0"	Gauge 3' 6"	Gauge 3' 8"	Gauge 4' 0"	Gauge 4' 8½"	Switch Points Suitable Length
-	12"	53° 0'	6.00	7 00	7 33	8 0	9 41	3' 0"
1¼	9¾"	43° 40'	9.36	10.93	11 44	12 50	14.85	3' 0"
1½	8"	36° 52'	13.50	15.75	16 50	18 00	21 19	4' 0"
1¾	6¾"	31° 53'	18.31	21 44	22 44	24 43	28 74	4' 0"
2	6"	28° 04'	24 00	28.00	29 33	32 00	37 85	4' 0"
2¼	5¼"	25° 03'	30.37	35 44	37 12	40 50	47 67	4' 0"
2½	4¾"	22° 37'	37.50	43.75	45 83	50.00	58 85	4' 0"
2¾	4⅜"	20° 37'	45.37	52 94	55 44	60 50	71 71	4' 0"
3	4"	18° 55'	54 00	63.00	66.00	72 00	84 75	5' 0"
3¼	3¾"	17° 30'	63 37	73.94	77 37	84 50	99 46	5' 0"
3½	3½"	16° 16'	73 50	85.75	90.00	98 00	115 27	5' 0"
3¾	3⅜"	15° 11'	84 37	98.44	107 21	116 96	137 57	5' 0"
4	3"	14° 15'	96.00	112 00	117 33	128 00	150 64	6' 0"
4¼	2¾"	13° 28'	108.37	126 43	132 45	144 50	169 79	6' 0"
4½	2½"	12° 41'	121 50	141 75	148 50	162 00	190 60	6' 0"
5	2½"	11° 25'	150 00	175 00	183 33	200 00	235 40	7' 0"

KILBY FROG & SWITCH COMPANY

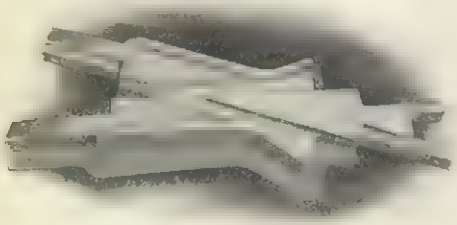
BIRMINGHAM, ALABAMA

Manufacturers of

Railroad Crossings, Frogs and Switches
Manganese Track Work

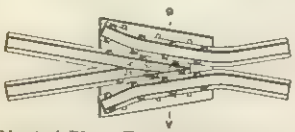
We are prepared to furnish any type of Switch, Room Turnouts, Portable Track, Cross-overs, or anything needed in the construction and operation of INDUSTRIAL TRACKS.

We show a few designs below—Can furnish any other design or type desired.



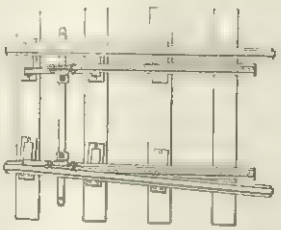
Solid Cast Steel Graham Flange Frog design No. 53-B. In its operation the flanges or guards set obliquely at correct distance and elevation to running line, guide the wheel flanges into their proper grooves on either side of the frog point by means of a gradual contact with the outer rim of the wheel treads. By its use the necessity of guard rails is eliminated, and the cost of maintenance is reduced to a minimum.

Solid Cast Steel Frog Design No. 80



Riveted Plate Frog Design No. 54

Above are three designs of frogs that will meet the necessity of any Industrial Track Operation.



Light Rail Switch design 103. Heavier switches of different lengths and additional accessories furnished when required.

Portable Turnout Design C.

Light Ball Ground Throw Design No. 181

Pressed Steel Rail Brace Design No. 202. Can also furnish Malleable Rail Braces if required.

SAWS, Butchers'

(See also Blades, Butcher's Saw)

American Saw & Mfg. Co., Springfield, Mass.
American Tap & Die Co.—See Wells Corp.
Arrow Head—See Jennings (C. E.) & Co.
Atkins (E. C.) & Co., Indianapolis, Ind.
★For descriptive data of the above, see index on page 6
Bishop—See Ohlen-Bishop Co.
Chatillon (John) & Sons, 85 Cliff, New York, N. Y.
Clemson Saw Co., Middletown, N. Y.
Decker, Ernest F., Albany, N. Y.
Disston (Henry) & Sons, (Tacony), Philadelphia, Pa.
Goodell-Pratt Co., Greenfield, Mass.
Jennings (C. E.) & Co., 71 Murray, New York, N. Y.
"Arrow Head"
Millers Falls Co., Millers Falls, Mass. "Star"
Nichols Bros.—See Wells Corp.
Ohlen-Bishop Co., Columbus, O. "Bishop"
Pittsburgh Saw & Mfg. Co., 216 2d Av., Pittsburgh, Pa.
Simonds Saw & Steel Co., Fitchburg, Mass.
Star—See Millers Falls Co.
Wells Corp., Greenfield, Mass. "Nichols Bros."

SAWS, Circular

Atkins (E. C.) & Co., Indianapolis, Ind.
★For descriptive data of the above, see index on page 6
Barnes (W. F. & John) Co., Rockford, Ill. (Power and foot-power)
Disston (Henry) & Sons (Tacony), Philadelphia, Pa.
Simonds Saw & Steel Co., Fitchburg, Mass.
Southern Saw Wks., Atlanta, Ga.
★For descriptive data of the above, see index on page 6

SAWS, Compass

Always Reliable—See Berns (Otto) Co
Arrow Head—See Jennings (C. E.) & Co.
Atkins (E. C.) & Co., Indianapolis, Ind.
★For descriptive data of the above, see index on page 6
Berns (Otto) Co., 17 Ashland, Newark, N. J.
Bishop—See Ohlen-Bishop Co.
Central Hdw. Co., 1716 Vine, Philadelphia, Pa.
Clemson Saw Co., Middletown, N. Y.
Decker, Ernest F., Albany, N. Y.
Disston (Henry) & Sons, (Tacony), Philadelphia, Pa.
★For descriptive data of the above, see index on page 6
Jennings (C. E.) & Co., 71 Murray, New York, N. Y.
"Arrow Head"
Kensington Hdw. & Tool Mfg. Co., (Germantown), Philadelphia, Pa.
Moore Bros., Jamestown, N. Y.
Ohlen-Bishop Co., Columbus, O. "Bishop"
Reading Saddle & Mfg. Co., Reading, Pa.
Simonds Saw & Steel Co., Fitchburg, Mass.

SAWS, Coping

Atkins (E. C.) & Co., Indianapolis, Ind.
★For descriptive data of the above, see index on page 6
Bishop—See Ohlen-Bishop Co.
Bridgeport Hdw. Mfg. Corp., Bridgeport, Conn. "Lead All," "Favorite," "Matchless"
Bullock Mfg. Association, Springfield, Mass.
Consolidated Tool Works, 296 Broadway, New York, N. Y. "Pilot"
Dikeman Mfg. Co., Norwalk, Conn.
Disston (Henry) & Sons, (Tacony), Philadelphia, Pa.
Favorite—See Bridgeport Hdw. Mfg. Corp.
Forsberg Mfg. Co., Bridgeport, Conn.
★For descriptive data of the above, see index on page 6
Griffin (G. W.) Co., Franklin, N. H.
Jennings (C. E.) & Co., 71 Murray, New York, N. Y.
Lead All—See Bridgeport Hdw. Mfg. Corp.
Matchless—See Bridgeport Hdw. Mfg. Corp.
Metal Saw & Mach. Co., Springfield, Mass. "Napier"
Millers Falls Co., Millers Falls, Mass.
Moore Bros., Jamestown, N. Y.
Napier Saw Wks., Middletown, N. Y.
Napier—See Metal Saw & Mach. Co.
Ohlen-Bishop Co., Columbus, O. "Bishop"
Pilot—See Consolidated Tool Wks.
Red Devil—See Smith & Hemenway Co.
Smith & Hemenway Co., 101 Colt, Irvington, N. J. "Red Devil"

SAWS, Cross-Cut

Aero Wks., 89 Warren, New York, N. Y.
Atkins (E. C.) & Co., Indianapolis, Ind.
★For descriptive data of the above, see index on page 6
Barnes (W. F. & John) Co., Rockford, Ill. (Power)
Bishop—See Ohlen-Bishop Co.
Clemson Saw Co., Middletown, N. Y.

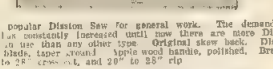
The Saw most Carpenters use

is the most profitable saw to sell

D-8

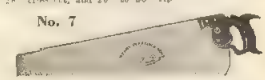
Most popular Disston Saw for general work. The demand for this saw has constantly increased until now there are more Disston D 8 saws in use than any other type. Original skew back. Disston-made steel blade, taper ground. Apple wood handle, polished. Brass screws 16" to 28" cross-cut, and 20" to 28" rip.

No. 7



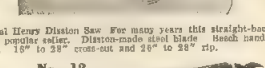
Original Henry Disston Saw. For many years this straight-back saw has been a popular seller. Disston-made steel blade. Beech handle. Brass screws. 16" to 28" cross-cut and 26" to 28" rip.

No. 12



For carpenters and saw users who take pride in having an exceptionally well made saw. Straight back, full width Disston-made steel blade. Extra tempered and ground. Apple-wood handle, carved and polished. Brass screws. 18" to 28" cross cut and 24", 26", 28" rip.

D-20

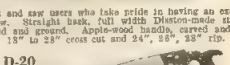


Made for those who prefer a narrow width blade. Skew-back design. 1⅜" wide at point and 9/4" at butt. Disston-made steel blade. Hardwood handle, carved and polished. Brass screws. 20" to 26" cross cut and 26" rip. D-23 same as D 20 except blade is straight back.

D-115

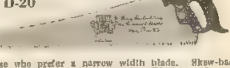
Finest product of the Disston Saw Works. Made as good in quality and beautiful in appearance as possible in a practical tool. Disston-made steel blade. Genuine rosewood handle, carved and polished. Nickel plated brass screws. 26" to 28" cross cut and 26" rip.

NO. 2 COMPASS SAW



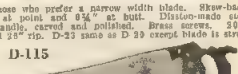
Blade of Disston-made steel and of a special temper to allow for twisting and turning. Hardwood handle. Brass screws. 10" to 13" lengths.

NO. 3 NEST OF SAWS



Combination of saws for general use. Three Disston-made steel blades of special temper—10" keyhole, 14" compass, and a 10" pruning. Beech handle, with varnished edges. Adjustable lever tightener.

NO. 4 BACK SAW



For fine work, sawing mitres, etc. Disston-made steel blade. Apple-wood handle. Brass screws. The back is of blued steel. Sizes range from 8" narrow blade and fine teeth to 18" with wide blade and coarser teeth.

A few popular sellers from the Disston line. Write for complete catalog

HENRY DISSTON & SONS, INC.
PHILADELPHIA, U. S. A.

DISSTON
SAWS TOOLS FILES

BEE KEEPERS' SUPPLIES.
HIGGINSVILLE DOVETAILED HIVES.

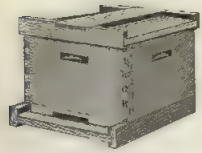


Fig. 1—1 Story
With Higginsville Cover

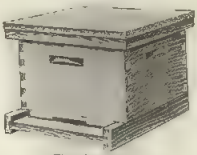


Fig. 2—1 Story
With Metal Roof and Inner Cover

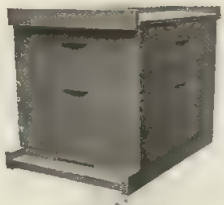


Fig. 1½—1½ Story
With Higginsville Cover

Five Hives (or bodies) in a crate. Five Supers in a crate. We do not break crates.

8-FRAME DOVETAILED HIVES.

Dimensions inside, 18¼ inches long, 12½ inches wide, 9⅝ inches deep.

1-Story, 8-Frame

No. 1A—1-story (brood chamber only, no super or section case) 8 Hoffman self-spacing frames, one bottom board, one Higginsville Hive cover, without starters; weight, 20 lbs. . . . Each, $4 08
No. 1M—with metal roof and inner cover; weight 30 lbs. Each, 4 94

1½-Story, 8-Frame, for Comb Honey

No. 1½—1½-story Hive, for comb honey, one brood chamber with 8 improved Hoffman frames, one super with a follower and two wedges, six scalloped section holders, 5 wood scalloped separators; 24 scalloped sections, 4¼x4¼x1⅞ inches, and comb foundation starters for sections; bottom board, cover, and nails; weight, 26 lbs. . . . . Each, $6 06
No. 1½M—With metal roof and inner cover, wt. 30 lbs Each, 6 72
No. 1½E—Same as No. 1½, but without sections and starters. Each, 5 40

1½-Story, for Extracted Honey

No. 6—This is a regular 1½-story Hive, having one super with shallow extracting frames, 5⅜ inches deep, 8 improved Hoffman frames, bottom board and cover, and nails; weight, 25 lbs., ... Each, $4 92
No. 6M With metal roof and inner cover, weight 35 lbs., ... Each, 5.78

10-FRAME DOVETAILED HIVES.

Dimensions inside, 18¼ inches long, 14⅛ inches wide, 9⅝ inches deep

1-Story, 10-Frame

No. 1-10A—1-story, (brood chamber only, no super or section case), 10 Hoffman self-spacing frames, one bottom board, one Higginsville Hive cover, without starters; weight, 32 lbs , Each, $4 56
No. 1-10M—With metal roof and inner cover, weight 32 lbs Each, 5 52
No. 1-10—1½-story Hive, for comb honey, one brood chamber with 10 improved Hoffman frames, one super with a follower and two wedges, six scalloped section holders, five wood scalloped separators; 24 scalloped sections, 4¼x4¼x1⅞ inches and comb foundation starters for sections; bottom board, cover, and nails; weight, 29 lbs., ... Each, $6 82
No. 1½M—With metal roof and inner cover, weight 39 lbs. . Each, 7 78
No. 1½-10E Same as No 1½-10, but without sections and starters, ... Each, 6 00

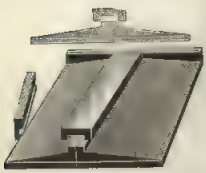
1½-Story, for Extracted Honey

No. 6-10—This is a regular 1½-story Hive, having one super with shallow extracting frames, 5⅜ inches deep, 10 improved Hoffman frames, bottom board and cover, wedges, and nails weight, 29 lbs., ... Each, $6 24
No. 6-10M With metal roof and inner cover, weight, 39 lbs., Each, 7 20

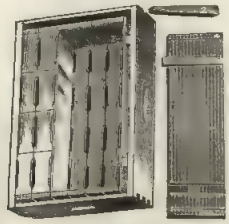
Five Hives (or bodies, in a crate. Five Supers in a crate. We do not break crates.

We shall be pleased to furnish on request a complete descriptive catalogue of Bee Supplies.

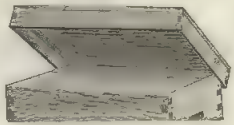
Hive Parts.



Cut showing the parts of the Improved Higginsville Hive Cover



Cut showing new Dovetailed Hive Super and Follower Board



Metal Roofed Cover with Super Cover

Parts of 8-Frame Hives

Cover-board, 8-frame, weight, 4 pounds Each, $0 96
Metal-roofed cover, with super cover, weight, 4½ pounds . Each, 1 82
Reversible bottom-board, 8-frame, weight, 6 pounds Each 92
Empty body, 8-frame, with T tins only, weight, 33¼ lbs. Each, 1 34
Shallow super, empty with flat tins only, 4¾ inches deep, weight 4 pounds . . . . . Each, 72
No. 3E—Shallow super, with section- holders and separators, 4¾ inches deep, weight, 7 pounds . . . . . Each, 1 32
No. 3—Shallow super, with section-holders, separators, sections and starters, 4¾ inches deep, weight, 7 pounds. . . . . Each, 1 98
No. 6E—Extracting super, empty, without tins, weight 4 pounds . . . . . Each, 84
No. 6—Extracting super, with frames, 5¾ inches deep, weight 7 pounds. . . . . Each, 1.46

Parts of 10-Frame Hives

Cover-board, 10-frame, weight 4½ pounds. . . . . Each, $1 08
Metal-roofed cover, with super cover, weight 5 pounds. . . Each, 2 04
Reversible bottom-board, 10-frame, weight, 7 pounds . Each, 1 00
Empty body, 10-frame with T tins only, weight, 4 pounds. Each, 1 42
Shallow super, empty with flat tins only, 4¾ inches deep, weight, 4 pounds . . . . . Each, 76
No. 3E-10—Shallow super, with section-holders and separators, 4¾ inches deep, weight 8 pounds . . . . . Each, 1 44
No. 3-10—Shallow super, with section-holders, separators, sections and starters, 4¾ inches deep, weight, 8 pounds . . . Each, 2 26
No. 6E-10—Extracting super, empty without tins, weight, 5 pounds . . . . . Each, 88
No. 6-10—Extracting super, with frames, 5¾ inches deep, weight 8pounds. . . . . Each, 1 68

Depth of shallow super for Dovetailed Hives is 4¾ inches; for deep super, 5¾ inches.

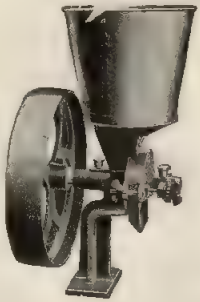
ARCADE FLOUR MILLS

No. 1A—HAND

Produces perfect flour from any small grain such as wheat, corn, barley, rye and rice, with but little effort, and works rapidly; simple in construction; can be adjusted to grind the finest flour or coarse poultry food. Grey enamel finish. Height, 11 inches.

No. 1A—Arcade Flour Mill; weight, 11 pounds.....Each, $5.40
One in a carton; six in a case; weight, 84 pounds.

No. 2A—POWER OR HAND

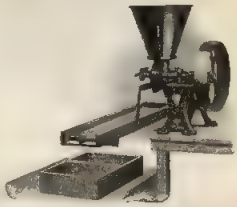


Grinding burr of same design as in No. 1, but of larger size. Will grind finest flour from all small grains or coarse meal or poultry food. Grey enamel finish. Operates by belt power or by crank handle. Height, 19 inches; hopper, 8½ inches diameter at top; 7 inches high. Pulley, 12 inches diameter. Capacity at 250 R. P. M., about 2 bushels per hour.

No. 2A—Arcade Flour Mill; weight, 23 pounds.....Each, $14 00
One in a wood case; weight, 32 pounds.

No. 3A—POWER OR HAND

With Automatic Sifting Device.



The big feature of the No. 3 Mill is the automatic sifting device which separates the bran middlings from the flour; the operation of device is very simple, it being suspended by an arm, as illustrated, and operated by a cam on the drive shaft.

This mill will grind any small grain, producing perfect flour of fine, medium or coarse texture, as wanted. Two burrs are furnished, one fine and one coarse, each with a wide range of adjustment. All bearings are babbitt lined and three oil cups provide ample lubrication.

Height above table, 20 inches. Height of hopper, 8 inches; diameter at top, 10 inches. Diameter of flywheel 12 inches. Size of sifter, 6x29 inches.

No. 3A—Arcade Flour Mill; weight, 39 pounds.....Each, $28 80
One in a wood case; weight, 65 pounds.
F. O. B. Factory.

CORN SHELLERS

NEW QUEEN

Perfectly separates corn from cobs, and, by use of a fan, cleans the grain thoroughly. Geared inside, right-hand drive. Never fails to give perfect satisfaction as a clean, easy running, and rapid corn sheller. A boy can run it.

The frame of this corn sheller is of hard wood, mortised and strongly put together, three feet high and two feet in length.

A 27-inch balance wheel, with steel spokes and steel shafts running in metal housings assure ease of operation.

Weight, with fan and feed table, 125 pounds.

No. 1NQ—New Queen Corn Sheller, as illustrated.....Each, $22.80

No. 1NQW—Without Fan and Feed Table; weight, 105 pounds.
.....Each, 18.90
F. O. B. Factory.

RED CHIEF

Pop Corn Attachment

Closed hopper makes it impossible for operator to punch hand.

Patented oval shape teeth, arranged on wheel to go between rows, pressing them from the ear instead of tearing them. Will not crack or otherwise injure grain. Throws cob outside every time.

Patented fastener clamp, with large strong wing nut, fastens securely by hand on box, barrel or tub. Holds steady. Easy to remove.

Tension directly on cob, no force being required to expand hopper. Perfect spring tension assures clean shelling of any size ear.

¾-inch cold rolled steel axle, with 4½-inch bearing on hub. Long, strong crank, securely fastened with No. 10 standard thread. Wooden handle, securely riveted to crank. Weight, 12 pounds.

No. 1RCS—Red Chief Corn Sheller.....Each, $4.00

No. PCA—Pop Corn Attachment; easily attached and self-adjusting. Will shell any size ear of pop corn.....Each, .70

Genuine Hildebrandt Spinners and Flies

Hildebrandt Spinners

Without Hook or Fly

These spinners are hand-made from very best materials, and have been CATCHING FISH for more than 28 years. Highly polished ALL NICKEL blades, ball-bearing, mounted on steel tinned music wire with reversible hinge lug. Snap connection on all baits allows any kind of hook or fly to be used. SLIM ELI Style spins very close to the shaft and looks like a minnow in the water; IDAHO Style spins out wide, and STANDARD Style spins medium. Small sizes for fly fishing and larger sizes for casting or trolling for all game fish.

EXACT SIZES OF BLADES

STANDARD				
0	1	2	3	3½
9-16x5-16	5-8x3-8	7-8x1-2	1 1-8x5-8	1 3-8x3-4
SLIM ELI				
0	1	2	3	3½
3-16x9-16	15-16x5x16	1 1-8x3-8	1 3-8x1-2	1 5-8x5-8
IDAHO				
0	1	2	3	3½
1-2x3-8	5-8x1-2	3-4x9-16	7-8x5-8	1x3-4

Single Spinners

Without Hook or Fly. All Nickel

Standard No.	Slim Eli No.	Idaho No.	Per dozen
18R94/0	18R121/0	18R123/0	1.18
18R94/1	18R121/1	18R123/1	1.18
18R94/2	18R121/2	18R123/2	1.18
18R94/3	18R121/3	18R123/3	1.18
18R94/3-1/2	18R121/3-1/2	18R123/3-1/2	1.57

Tandem Spinners (2 Blades)

Without Hook or Fly. All Nickel

Standard No.	Slim Eli No.	Idaho No.	Per dozen
18R99/00	18R122/00	18R124/00	1.98
18R99/A	18R122/A	18R124/A	1.98
18R99/B	18R122/B	18R124/B	1.96
18R99/C	18R122/C	18R124/C	1.96

All Spinners packed each on card, one dozen in box.

Hildebrandt Flies only

For Use with Hildebrandt Spinners

Fancy Feather

Bucktail

Hildebrandt flies are hand-tied from very best materials, in all popular varieties of patterns. Silk, chenille and silver and gold striped bodies, bright snappy colors of feathers and hair, all tied on hollow point sneck hooks ringed, for spinner use, or for use alone. Made up in assortments of one dozen, selected best flies, fancy feather, bucktail and squirrel tail, as follows:

Squirrel Tail

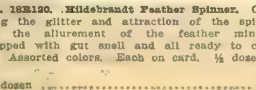
Assortment consists of one dozen flies assorted as above, in hook sizes 8-6-4, suitable for small game fish weighing up to one pound. 3 on card, one dozen in box.

No. 18R111.
Per assortment 1.18

Assortment consists of 1 dozen assorted flies as above, in hook sizes 2-1/0-2/0, suitable for game fish larger than one pound, especially bass, 3 on card, one dozen in box.

No. 18R112.
Per assortment 1.57

Hildebrandt Feather Spinner



No. 18R120. Hildebrandt Feather Spinner. Combining the glitter and attraction of the spinner with the allurement of the feather minnow. Equipped with gut snell and all ready to catch fish. Assorted colors. Each on card. ½ dozen in box.

Per dozen 5.88

FLIES, SPINNERS and PRESERVED BAITS

Standard Trout Flies

Standard Trout Flies, consists of flat folded wings, worsted bodies on finest quality imported spear point hooks, tied to single midst looped and knotted gut. Flies are thoroughly inspected and guaranteed, perfect in quality and workmanship. Packed one dozen of one pattern in box. 1 gross in carton. Furnished in the following patterns.

White Miller	Professor
Coachman	Cowdung
Red Ibis	Grizzly King
Black Knat	Royal Coachman
Brown Hackle	Gray Hackle

Can supply any other pattern at 5 cents extra per dozen. No less than 6 dozen of special pattern sold.

No.	Size	Per Gross	Per doz.
1SR30	8	6.00	.55
1SR31.	10	6.00	.55

Bass Fly Assortment

This is a selection of 12 best styles of bass flies. Hooks No. 1-0 assorted, 12 different kinds sewed on a card. This represents the 12 most popular flies sold and used by experienced fishermen.

No. 1SR33. Per card..... 1.25

Superior Pennell Trout Flies. Tied with flat folded wing; highest quality silk body on imported turned down eye hook. Tied to single Mist looped and knotted gut. One dozen of one pattern in box. One gross in carton. Can be had in same patterns as Standard Trout Flies. Can also supply our Superior grade in any other pattern or hook size at 5 cents extra per dozen. No less than 6 dozen of special pattern made.

No.	Size	Per Gross	Per doz.
1SR171.	8	8.50	.75

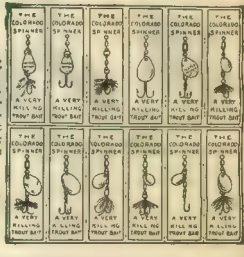
Colorado Spinner. Highest quality hollow point hook with highly polished nickel blade and barrel swivel. Packed 6 on perforated card. One dozen in box.

No. 1SR173. Per dozen..... 1.25

Colorado Spinner. Only best white pearl blades finely polished together with Hollow Point Hook and barrel swivel used. Packed 6 on perforated card. One dozen in box.

No. 1SR174. Per dozen..... 1.45

Colorado Spinner Assortment



Colorado Spinner Assortment. Made of only the highest quality materials and a very effective bait. This assortment covers all of the best selling numbers. 6 on a card, 2 cards in box.

No. 1SR175.
Per Asst. of 1 doz..... 1.35

Minnow Shaped Pork Rind Bait, is die cut to closely resemble miniature size minnow. Has about ⅛ inch fat on rind to be trimmed to suit individual's ideas. 6 pieces in jar, 3 dozen jars in case.

No. 19R27. Per doz. jars.... 2.45

Preserved Silver Minnows, selected small sizes suitable for bass, croppies, sunfish, etc. Preserved to retain natural appearance and are properly toughened to remain on hook. 10 to 12 silver minnows in jar, 3 dozen jars in case.

No. 19R28. Per doz. jars.... 3.50

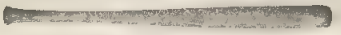
Preserved Silver Shiner, selected medium sizes for game fishing. Preserved to retain proper color and life-like appearance. Will remain on hook much longer than live bait. 18 to 26 shiners in jar, 2 dozen jars in case.

No. 19R29. Per doz. jars.... 3.50

Bait Frogs, selected sizes suitable for bass, pickerel, pike, etc. Very life-like in appearance, and toughened by preservation so that in casting or trolling they remain on hook much longer than live frogs. 12 frogs in jar, 2 dozen jars in case.

No. 19R30. Per doz. jars.... 4.00

BASE BALL BATS.

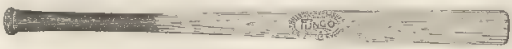


No. 10—BING-GO

No. 10 BING-GO—Made of second growth ash. Golden flame burnt, highly polished. Turned from an assortment of choice models. Packed four dozen in a crate. Assorted weight and assorted lengths, 32 to 36 inches. Per Dozen, **$24.00**

No. 16—BURNT OIL FINISH, TAPED.

No. 16—Made of second growth ash, 32 to 36 inches long, new special burnt oil finish, hand turned, highly polished, transfer, made in twelve models, taped handle, assorted weights, one in a paper bag, 3 dozen in a crate, weight about 110 pounds. Per Dozen, **$21.60**



No. 24—WILLOW FUNGO.

No. 24—Made of willow for fungo batting only. 33 to 36 inches long, golden finish, black handle, highly polished, one in a paper bag, 3 dozen in a crate, weight about 110 pounds. Per Dozen, **$16.00**

No. 13—KING OF THE FIELD, TAPED.

No. 13—Made of second growth ash, 32 to 35 inches long, new golden finish, highly polished, with new transfer, tape-wound handle, one in a paper bag, 3 dozen in a crate, weight about 110 pounds. Per Dozen, **$14.40**

No. 11B SEMI-PRO.

No. 11B—Made of second growth ash, 32 to 35 inches long, assorted brown finished barrel, natural finished handle, center taped, highly polished, with transfer, branded "Semi-Pro." One in a paper bag, 3 dozen in a crate, weight about 110 pounds. Per Dozen, **$14.40**

No. 4—JUNIOR LEAGUE

No. 4—Youth's bat, made of ash, 32 inches long, flame burnt, golden finish, highly polished, 3 dozen in a crate, weight about 75 pounds. Per Dozen **$7.20**

No. 2—HILLERICH'S CRACKERJACK.

No. 02—Made of ash, boy's bat, 28 inches long, yellow finish, highly polished, 6 dozen in a crate, weight about 150 pounds. Per Dozen, **$4.00**

INDOOR BATS.

Reach Indoor Base Ball Bats are made of second growth, straight grained ash.

No. 0—Burned and polished finish. Taped handle. Retails for $1.00. ..... Per Dozen, **$16.00**

No. 2—Burned finish. Plain handle. Retails for $0.75. ..... Per Dozen, **$12.00**

NOTICE Bats are not guaranteed against breakage and will not be replaced regardless of how they are broken. No adjustments on broken bats will be made.

THE HOAR SHOVEL COMPANY

DULUTH, MINNESOTA

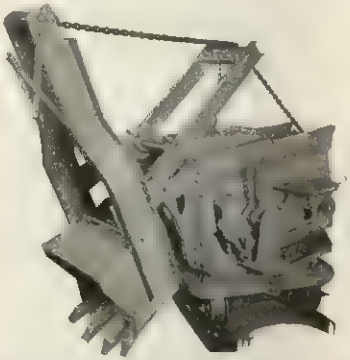
Underground Power Shovels

Application

Hoar Underground Shovels are used by representative companies throughout the Pennsylvania Anthracite field for mucking of main entries, haulage ways, and rock development work of all kinds. Users of Hoar Shovels have been enabled to increase the depth of their shots, and have eliminated block-holing.

General Decription

The Hoar Underground Shovel is a completely revolving power shovel which will operate in a drift 7'x7' or over in section. It is built on the principle of the standard steam shovel, which is fundamentally correct when applied to excavating machinery.



The shovel is swung through a complete circle, in either direction, by a reversible air motor. A second air motor, through a self-locking worm gear, drives the carriage on which the dipper stick is mounted, forward and backward, giving direct thrust into the breast, as well as the extension needed for dumping in the cars. A third air motor operates the hoisting mechanism for the filling and hoisting of the dipper. The control of the motors, and through them of the entire machine, is centered in three levers in front of the operator's seat.

The Hoar Shovel is a one-man outfit. The dipper can be dumped anywhere within its reach, and does its own trimming. No hand work is necessary with the Hoar Shovel. The shovel is conveniently lowered into the mine, will dig and move around a corner or curve, working up or down grade as well as on the level. Machines can be stripped by a few minutes' work, and thus stripped will pass through an opening 42"x54".

In operation the shovel is run up to the breast by hand or mine locomotive and clamped to the rails. It pulls up the mine cars by means of the dipper stick, and propels itself forward by thrusting the dipper against the wall or blocked cars.

Construction Details

With the exception of the dipper and dipper sticks, all parts of the shovel subject to stress are of cast steel. Double ball bearings are used in mounting the body on the truck, insuring accurate alignment and smooth working. The cast steel carriage is mounted on hardened steel rollers. The dipper mechanism consists of two arms pivoted together to allow the dipper flexibility in working the bottom. Dipper sticks and dipper arms are adjustable as to height and length to suit the conditions of the work and height of the cars.

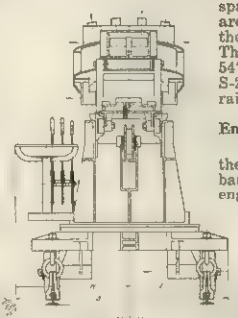
Specifications

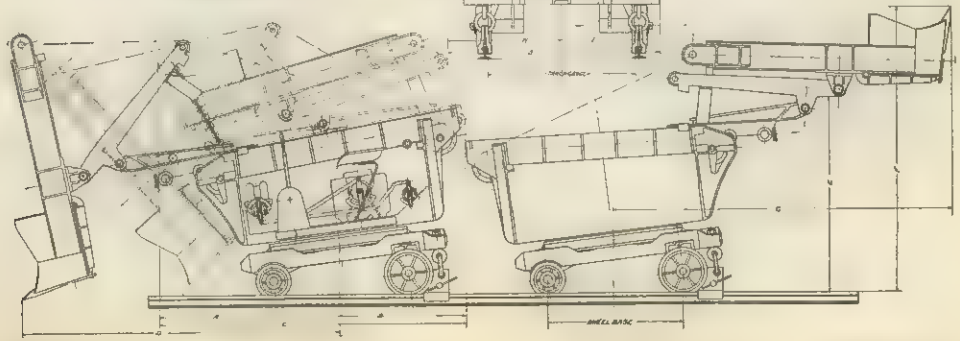
Hoar Underground Shovels are built in two sizes, Model 2 for drifts of 7'x7' and over in cross section and Model S-2 for drifts of 8'x9' and over in cross section. The operating space, height of cars, and similar data, are set forth in the table accompanying the illustration to the left of the page. The Model 2 will load into cars up to 54" high above crown of rail, the Model S-2 into cars 68" high above crown of rail.

Specifications	Model 2	Model S-2
Swinging Motor	4½ H. P.	4½ H. P.
Hoisting Motor	7 H. P.	7 H. P.
Crowding Motor	7 H. P.	7 H. P.
Dipper Capacity	4.5 or 6 Cu. Ft.	4.5 or 6 Cu. Ft.
Weight	6,600 Lbs.	8,400 Lbs.
Air Pressure Required	80 Lbs.	80 Lbs.
Air Consumption Per Minute	300 Feet	300 Feet
Air Connection	1½ Inches	1½ Inches

Engineering Service

We will be pleased to furnish further particulars and performance data based on your own conditions. Our engineers are at your service.





How Hohner is Creating Sales *~for You!*

This year will prove the biggest year in the history of harmonica manufacturing and selling. It will also prove a record-breaker in profits for Hohner dealers.

This record breaking business is directly traceable to the big Hohner campaign of national advertising and publicity. In magazines, newspapers, trade papers, billboards, window displays, movies, contests and educational work.

We are constantly urging people to go to their dealers and ask for a copy of this Free Hohner Instruction Book. By keeping a supply of these free books on hand you can turn these inquiries into sales.

Hohner interest and enthusiasm is sweeping the country. You can easily turn it into money. Be ready with a Hohner display, free instruction books and a bigger stock than ever.

This Big Summer Advertising Campaign Will Be Read in 20 Million Homes

This partial list of the national weekly and monthly magazines will carry the Hohner message of good music and fun to 20 million homes this summer. In addition to these magazines Hohner advertising will appear in newspapers billboards movies and other mediums of national appeal. You will appreciate the importance of stocking Hohner goods—and pushing them.

Boys' Life
American Boy
Boys' Magazine
Youth's Companion
Lone Scout
St. Nicholas
Riker & King Magazines
Colorado Weekly
True Story
Success
Forest & Stream
People's Popular Monthly
Cosmopolitan
American Legion Weekly
Columbia
Elks Magazine
Hearst's International
German National
Farm Weeklies
True Romances
Home Friend
Household Journal
Household
Boyce's Weeklies
Red Book
American Magazine
Motion Picture
Classic
Screenland
Pathe Gazette
Physical Culture
Real Life Stories
Popular Mechanics
Popular Science Monthly
Photoplay
Grit
Pathfinder
Picture Play

If you want to tie up with Hohner Advertising, write—

M. HOHNER, Inc., Dept. 45, 116 East 16th St., NEW YORK

HOHNER HARMONICAS

12 Million Hohner Harmonicas
WILL BE SOLD THIS YEAR
Are You Getting your Share of This Business?

EVERY progressive dealer in the United States and Canada will be interested in the romance of the HOHNER HARMONICA and the enormous increase in its use and sale.

The graphic story of a telephone call from a high school principal in New York City that led to the organization of harmonica school orchestras and municipal harmonica contests in all the leading cities of America, is one of the most amazing sales achievements recorded in many years.

As a dealer, you should know more about this achievement which has built up a demand for more than 12,000,000 HOHNER HARMONICAS a year in America

Every dealer in the country should be sharing in this remarkable business. Some of them are not. Many do not realize the tremendous growth in the sale of harmonicas during the past year. As a steady repeat seller to people of all ages, it will pay you to stock HOHNER HARMONICAS and *push* them.

A HOHNER DISPLAY assortment on your counter will tie your store to the big HOHNER national advertising campaign and enable you to cash in on this nation wide movement to popularize music.

The Free HOHNER Instruction books which we are offering in our advertising will attract an increasing number of new customers to your store.

A HOHNER Display on your counter will create steady sales and pay you a splendid profit. Why not let us show you how you can get your share of this ever-increasing business?

IMPORTANT TO HOHNER DEALERS

Hohner interest and enthusiasm is sweeping the country. You can easily turn it into money by tying up with the big Hohner Advertising Campaign. Be ready with a Hohner display, colored charts, free instruction books, and a bigger stock than ever. We are creating the demand. All we ask you to do is to help us meet it. You can get your share of this splendid business by stocking Hohner goods — and *pushing* them.

If You Want to Tie Up With Hohner Advertising Write

M. HOHNER, Inc., Dept. 45, 116 E. 116 St., N. Y.

Fascination Inspiration Education Entertainment Musical Accuracy Health Portability Durability Convenience Popularity

HOHNER HARMONICAS

Six o'clock and all is well!

Last sale made—all records, too

The Sundstrand Combination Cash Register *forces* correct and immediate recording of the *who, what, when* and *why* of each transaction. It clearly indicates on the detail strip which clerk what department and whether cash, charge, paid out, or no sale. Handy sliding levers on a clean cut dial make operation quick, easy and positive. Levers *must* be operated before amount can be recorded or cash drawer opened. The register can't forget and won't let the clerk.

Clerk, customer and proprietor—all are protected. Each clerk gets full credit for all sales. Customer gets quick service, and disputes are avoided. Proprietor always knows "What's what"—operates his business with peace of mind, having reliable facts on which to base right action. Losses due to errors are eliminated. Greater profits are assured.

Let us show you, in your own store, how this low cost machine offers *two* services—cash register and adding machine. Credit file furnished at slight extra cost. No obligation. Address Dept. H-9.

1. Cash Register—Classifies sales by clerks and departments. Makes a non-erasable record. Assures correct indication and recording of cash, credit, paid out, or no sale. You read cash total and time. Tape rewinds and locks in machine.

2. Adding Machine—Famous Sundstrand adding machine action multiplies, etc. Saves time, effort and prevents errors in checking sales slips and inventories, in footing ledger balances, etc. Range up to $99,999,999.

3. Credit File—Extra equipment (slight extra cost). Names and Balance due posted to date. You make settlements from original sales slips. Statement goes with each purchase. Positive safeguard against duplicate protection. Holds 200 credit accounts. 2,000 sales slips. Add more trays if desired. Saves hours of bookkeeping.

Sundstrand COMBINATION CASH REGISTER

Adds—Multiplies Automatic Control Forced-Correct-Indication

Sundstrand Adding Machine Co Rockford, Ill., U. S. A.

Sales and Service Stations everywhere in the United States and Foreign Countries

In buying from advertisers in GOOD HARDWARE you are assured of

HOLMES & EDWARDS

HOSTESS PATTERN

Illustrations Full Size

SUPER PLATE INLAID

Tea Spoons	Plain Box	$8.36 doz
Tea Spoons	Super Case or Roll	9.20 doz
Dessert Spoons	Plain Box	16.16 doz
Dessert Spoons	Super Case or Roll	17.12 doz
Table Spoons	Plain Box	16.68 doz
Table Spoons	Super Case or Roll	17.72 doz
Soup Spoons Round Bowl	Plain Box	16.68 doz
Soup Spoons Round Bowl	Super Case or Roll	17.72 doz
Breakfast Forks	Plain Box	16.16 doz.
Breakfast Forks	Super Case or Roll	17.12 doz.
Dinner Forks	Plain Box	16.68 doz
Dinner Forks	Super Case or Roll	17.72 doz

SPOONS

Sugar	Super Case or Bag	$1.50 each
Coffee (Demi Tasse)	Super Case	4.18 six
5 O'clock Tea or Sherbet	Plain Box	4.18 six
5 O'clock Tea or Sherbet	Super Case or Roll	4.60 six
Orange or Grape Fruit	Super Case	5.32 six
Bouillon	Super Case	2.78 six
Educator (Short Handle)	Super Case	.14 each
Berry or Salad, Serving	Super Case	3.42 each
Iced Tea or Parfait	Plain Box	6.06 six
Iced Tea or Parfait	Super Case	6.74 six
Baby's (Bent Handle	Super Case	1.14 each
Olive	Super Case	1.90 each

FORKS

5 O'clock Tea	Plain Box	$5.72 six
5 O'clock Tea	Super Case or Roll	6.16 six
Oyster	Super Case	3.50 six
Pickle	Super Case	1.58 each
Ice Cream	Super Case	6.66 six
Cold Meat or Salad, Serving	Super Case	2.21 each
Salad, Individual	Super Case	8.34 six
Educator (Short Handle)	Super Case	1.14 each
Pastry Individual	Super Case	8.34 six

KNIVES

Butter	Super Case or Bag	$1.69 each
Butter Spreaders	Super Case	6.84 six

LADLES

Mayonnaise	Super Case	$1.77 each
Whipped Cream	Super Case	2.04 each
Gravy	Super Case	2.67 each
Soup	Super Case	8.21 each

SPECIAL SERVING PIECES

Jelly Server	Super Case	$1.90 each
Sugar Tongs	Super Case	2.15 each
Tomato or Egg Server	Super Case	1.81 each
Cake or Pastry Server	Super Case	2.21 each

SILVERWELD KNIVES

Super Case or Roll	$16.68 doz

HOLLOW HANDLE CUTLERY

Dinner Knives	Super Case or Roll	$24.80 doz
Dinner Knives, Stainless	Super Case or Roll	28.68 doz
Breakfast Knives	Super Case or Roll	24.52 doz.
Breakfast Knives, Stainless	Super Case or Roll	28.40 doz
Fruit Knives	Super Case	20.80 doz
Fruit Knives, Stainless	Super Case	28.68 doz
Butter Spreaders	Super Case	24.80 doz
Educator Knives	Super Case	2.06 each
Pie Server	Super Case	4.56 each
Cheese Server	Super Case	2.60 each

HOLLOW HANDLE CARVING SETS

(Extra per set for Stainless Blades)		$ .36 set
3-Pc. Meat Set, 9" Blade	Super Case	18.24 set
2-Pc. Meat Set, 9" Blade	Super Case	13.04 set
3-Pc. Game Set, 7" Blade	Super Case	15.64 set
2-Pc. Game Set, 7" Blade	Super Case	11.04 set
2 Pc. Steak Set, 6" Blade	Super Case	8.46 set

SILVERWELD SOLID HANDLE KNIVES

If desired in place of Hollow Handle knives make the following reduction from prices in sets with six knives deduct $3.92

STAINLESS BLADES IN HOLLOW HANDLE KNIVES

Make the following addition to printed prices In sets with six knives add $1.94

2-PIECE SETS

In Super Cases

Sugar Shell and Butter Knife	$3.20
Educator Spoon and Fork	2.28
Berry Shell and Cold Meat Fork	5.64
H H Salad Set, Olivewood Tines	8.48

3-PIECE SETS

In Super Cases

Child's Spoon, Fork Flat Knife	$3.50
Child's Spoon, Fork H H Knife	4.22
Educator Spoon, Fork, H H Knife	4.64

12-PIECE KNIFE AND FORK SETS

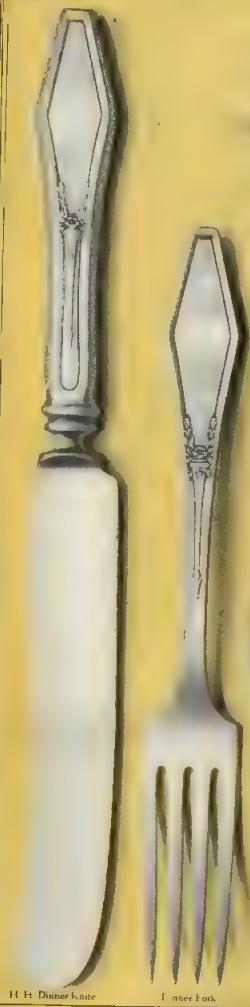
In Super Cases

Dinner Set—H H Knives	$20.76
Breakfast Set H H Knives	20.34

11 & F-6-3

HOLMES & EDWARDS

JAMESTOWN PATTERN



H H Dinner Knife

Dinner Fork

Table Spoon

Tea Spoon

Illustrations Full Size

SUPER PLATE -INLAID

Tea Spoons	Plain Box	$6 36 doz
Tea Spoons	Super Case or Roll	9 20 doz
Dessert Spoons	Plain Box	16 16 doz
Dessert Spoons	Super Case or Roll	17 12 doz
Table Spoons	Plain Box	16 68 doz
Table Spoons	Super Case or Roll	17 72 doz
Soup Spoons Round Bowl	Plain Box	16 68 doz.
Soup Spoons Round Bowl	Super Case or Roll	17 72 doz
Breakfast Forks	Plain Box	16 16 doz
Breakfast Forks	Super Case or Roll	17 12 doz
Dinner Forks	Plain Box	16 68 doz
Dinner Forks	Super Case or Roll	17 72 doz.

SPOONS

Sugar	Super Case or Bag	$1 50 each
Coffee (Demi Tasse)	Super Case	4 18 six
5 O'clock Tea or Sherbet	Plain Box	4 18 six
5 O'clock Tea or Sherbet	Super Case or Roll	4 60 six
Orange or Grape Fruit	Super Case	5 32 six
Bouillon	Super Case	7 78 six
Educator, Short Hand'e	Super Case	1 14 each
Berry or Salad Serving	Super Case	3 42 each
Iced Tea or Parfait	Plain Box	6 06 six
Iced Tea or Parfait	Super Case	6 74 six
Beav's Bent Handle	Super Case	1 14 each
Olive	Super Case	1 90 each

FORKS

5 O'clock Tea	Plain Box	$5 72 six
5 O'clock Tea	Super Case or Roll	6 14 six
Oyster	Super Case	5 50 six
Pickle	Super Case	1 58 each
Ice Cream	Super Case	6.66 six
Cold Meat or Salad, Serving	Super Case	2 21 each
Salad, Individual	Super Case	8.34 six
Educator (Short Handle)	Super Case	1 14 each

KNIVES

Butter	Super Case or Bag	$1 69 each
Butter Spreaders	Super Case or Bag	6.84 six

LADLES

Mayonnaise	Super Case	$1 77 each
Whipped Cream	Super Case	2.04 each
Gravy	Super Case	2.67 each
Soup	Super Case	8.21 each

SPECIAL SERVING PIECES

Jelly Server	Super Case	$1 90 each
Sugar Tongs	Super Case	2 15 each
Tomato or Egg Server	Super Case	3.81 each
Cake or Pastry Server	Super Case	2.21 each

SILVERWELD KNIVES

Super Case or Roll . . . . . $16.68 doz.

HOLLOW HANDLE CUTLERY

Dinner Knives	Super Case or Roll	$24 80 doz.
Dinner Knives, Stainless	Super Case or Roll	28.68 doz.
Breakfast Knives	Super Case or Roll	24.52 doz
Breakfast Knives, Stainless	Super Case or Roll	28 40 doz.
Fruit Knives	Super Case	24 80 doz.
Fruit Knives, Stainless	Super Case	28 68 doz.
Butter Spreaders	Super Case	24.80 doz.
Educator Knives	Super Case	2.06 each
Pie Server	Super Case	4.56 each
Cheese Server	Super Case	2.60 each

HOLLOW HANDLE CARVING SETS

(Extra pair set for Stainless Blades)		$1 36 set
3-Pc Meat Set, 9" Blade	Super Case	18.24 set
2 Pc Meat Set, 9" Blade	Super Case	13.04 set
3 Pc Game Set 7" Blade	Super Case	15.64 set
2-Pc Game Set, 7" Blade	Super Case	11 04 set
2-Pc. Steak Set, 6" Blade	Super Case	8.46 set

SILVERWELD SOLID HANDLE KNIVES

If desired in place of Hollow Handle Knives make the following reduction from prices

In sets with six knives, deduct . . . $3.92

STAINLESS BLADES IN HOLLOW HANDLE KNIVES

Make the following addition to printed prices.

In sets with six knives, add . . . $7 04

2-PIECE SETS

In Super Cases

Sugar Shell and Butter Knife	$3.20
Educator Spoon and Fork	2.28
Berry Shell and Cold Meat Fork	5.64
H H Salad Set Olivewood Tines	6.48

3-PIECE SETS

In Super Cases

Child's Spoon Fork, Flat Knife	$3.50
Child's Spoon Fork, H H Knife	4.22
Educator Spoon, Fork, H H Knife	4.84

12-PIECE KNIFE AND FORK SETS

In Super Cases

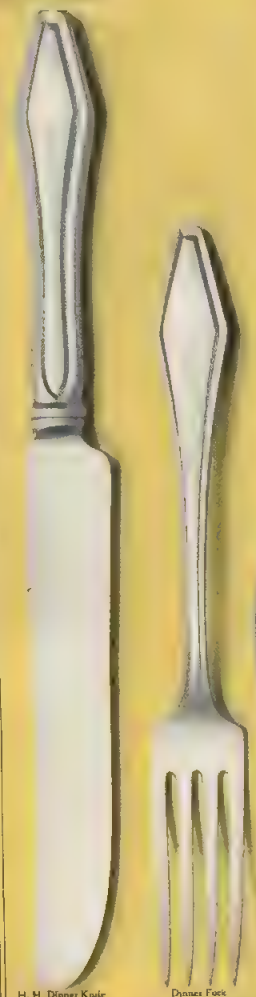
Dinner Set—H H Knives	$20.76
Breakfast Set—H. H. Knives	20.34

H & E-0-23

INTERNATIONAL SILVER CO.

HOLMES & EDWARDS

NEWPORT PATTERN



Illustrations Full Size

SUPER PLATE INLAID

Tea Spoons	Plain Box	$8.36 doz
Tea Spoons	Super Case or Roll	9.20 doz
Dessert Spoons	Plain Box	6.16 doz
Dessert Spoons	Super Case or Roll	17.12 doz
Table Spoons	Plain Box	16.68 doz
Table Spoons	Super Case or Roll	17.72 doz
Soup Spoons (Round Bowl)	Plain Box	16.68 doz
Soup Spoons (Round Bowl)	Super Case or Roll	17.72 doz
Breakfast Forks	Plain Box	16.16 doz
Breakfast Forks	Super Case or Roll	17.12 doz
Dinner Forks	Plain Box	16.68 doz.
Dinner Forks	Super Case or Roll	17.72 doz

SPOONS

Sugar	Super Case or Bag	$ .50 each
Coffee (Demi Tasse)	Super Case	4.18 six
5 O'clock Tea or Sherbet	Plain Box	4.18 six
5 O'clock Tea or Sherbet	Super Case or Roll	4.60 six
Orange or Grape Fruit	Super Case	5.32 six
Bouillon	Super Case	7.78 six
Educator Short Handle	Super Case	1.14 each
Berry or Salad Serving	Super Case	3.42 each
Iced Tea or Parfait	Plain Box	6.06 six
Iced Tea or Parfait	Super Case	6.74 six
Baby's (Bent Handle)	Super Case	1.14 each
Olive	Super Case	1.90 each

FORKS

5 O'clock Tea	Plain Box	$5.72 six
5 O'clock Tea	Super Case or Roll	6.14 six
Oyster	Super Case	5.30 six
Pickle	Super Case	1.56 each
Ice Cream	Super Case	6.60 six
Cold Meat or Salad Serving	Super Case	2.21 each
Salad, Individual	Super Case	8.34 six
Educator Short Handle	Super Case	1.14 each

KNIVES

Butter	Super Case or Bag	$1.69 each
Butter Spreaders	Super Case	6.84 six

LADLES

Mayonnaise	Super Case	$1.27 each
Whipped Cream	Super Case	2.04 each
Gravy	Super Case	2.67 each
Soup	Super Case	8.2 each

SPECIAL SERVING PIECES

Jelly Server	Super Case	$1.90 each
Sugar Tongs	Super Case	2.15 each
Tomato or Egg Server	Super Case	3.81 each
Cake or Pastry Server	Super Case	2.21 each

SILVERWELD KNIVES

Super Case or Roll . . . . . $16.68 doz

HOLLOW HANDLE CUTLERY

Dinner Knives	Super Case or Roll	$24.80 doz
Dinner Knives, Stainless	Super Case or Roll	28.68 doz
Breakfast Knives	Super Case or Roll	24.52 doz
Breakfast Knives, Stainless	Super Case or Roll	28.40 doz.
Fruit Knives	Super Case	24.80 doz.
Fruit Knives, Stainless	Super Case	28.68 doz.
Pie Server	Super Case	4.56 each

HOLLOW HANDLE CARVING SETS

Extra per set for Stainless Blades		$1.36 set
1-Pc. Game Set, 7" Blade	Super Case	15.64 set
1-Pc. Game Set, 7" Blade	Super Case	11.04 set
2 Pc. Steak Set, 6" Blade	Super Case	8.46 set

SILVERWELD SOLID HANDLE KNIVES

If desired in place of Hollow Handle Knives make the following reduction from prices
In sets with six knives, deduct $3.92

STAINLESS BLADES IN HOLLOW HANDLE KNIVES

Make the following addition to printed prices
In sets with six knives, add $1.94

2-PIECE SETS

In Super Cases

Sugar Shell and Butter Knife	$3.20
Educator Spoon and Fork	2.28
Berry Shell and Cold Meat Fork	5.64
H. H. Salad Set, Olivewood Tines	8.48

3-PIECE SETS

In Super Cases

Child's Spoon, Fork, Flat Knife	$3.50
Child's Spoon, Fork, H. H. Knife	4.22
Educator Spoon, Fork, H. H. Knife	4.84

12-PIECE KNIFE AND FORK SETS

In Super Cases

Dinner Set—H. H. Knives	$20.76
Breakfast Set—H. H. Knives	20.34

H & E-6-23

HOLMES & EDWARDS

JAMESTOWN PATTERN

Illustrations Full Size

SUPER PLATE INLAID

Tea Spoons	Plain Box	$5.56 doz
Tea Spoons	Super Case or Roll	9.20 doz
Dessert Spoons	Plain Box	16.16 doz
Dessert Spoons	Super Case or Roll	17. 2 doz
Table Spoons	Plain Box	16.68 doz
Table Spoons	Super Case or Roll	17 72 doz
Soup Spoons Round Bowl	Plain Box	16.68 doz.
Soup Spoons Round Bowl	Super Case or Roll	17 72 doz
Breakfast Forks	Plain Box	16.16 doz.
Breakfast Forks	Super Case or Roll	17 12 doz.
Dinner Forks	Plain Box	16 68 doz
Dinner Forks	Super Case or Roll	17 72 doz

SPOONS

Sugar	Super Case or Bag	$1 50 each
Coffee (Demi Tasse)	Super Case	4 8 six
5 O'clock Tea or Sherbet	Plain Box	4.18 six
5 O'clock Tea or Sherbet	Super Case or Roll	4.60 six
Orange or Grape Fruit	Super Case	5 32 six
Bouillon	Super Case	7 78 six
Educator (Short Handle)	Super Case	1 4 each
Berry or Salad, Serving	Super Case	3 42 each
Iced Tea or Parfait	Plain Box	6.16 six
Iced Tea or Parfait	Super Case	6.74 six
Baby's (Bent Handle)	Super Case	1 14 each
Olive	Super Case	1 90 each

FORKS

5 O'clock Tea	Plain Box	$5 72 six
5 O'clock Tea	Super Case or Roll	6 14 six
Oyster	Super Case	5 50 six
Pickle	Super Case	1 58 each
Ice Cream	Super Case	6 66 six
Cold Meat or Salad, Serving	Super Case	2 2 each
Salad, Individual	Super Case	3 34 six
Educator (Short Handle)	Super Case	1 4 each

KNIVES

Butter	Super Case or Bag	$1 69 each
Butter Spreaders	Super Case or Bag	6.84 six

LADLES

Mayonnaise	Super Case $1.77 each
Whipped Cream	Super Case 2.04 each
Gravy	Super Case 2.67 each
Soup	Super Case 8.21 each

SPECIAL SERVING PIECES

Jelly Server	Super Case	$1 90 each
Sugar Tongs	Super Case	2 15 each
Tomato or Egg Server	Super Case	3 81 each
Cake or Pastry Server	Super Case	2.21 each

SILVERWELD KNIVES

Super Case or Roll . . . . . $16.68 doz.

HOLLOW HANDLE CUTLERY

Dinner Knives	Super Case or Roll	$24 80 doz.
Dinner Knives, Stainless	Super Case or Roll	28.68 doz.
Breakfast Knives	Super Case or Roll	24.52 doz.
Breakfast Knives, Stainless	Super Case or Roll	28 40 doz
Fruit Knives	Super Case	24 80 doz
Fruit Knives, Stainless	Super Case	29.68 doz
Butter Spreaders	Super Case	24 80 doz
Educator Knives	Super Case	2.06 each
Pie Server	Super Case	4 56 each
Cheese Server	Super Case	2.60 each

HOLLOW HANDLE CARVING SETS

Extra per set for Stainless Blades)		$1 36 set
3 Pc. Meat Set, 9" Blade	Super Case	16.24 set
2 Pc. Meat Set, 9" Blade	Super Case	13 04 set
3 Pc. Game Set, 7" Blade	Super Case	15 64 set
2-Pc. Game Set, 7" Blade	Super Case	11 04 set
2-Pc. Steak Set, 6" Blade	Super Case	8.46 set

SILVERWELD SOLID HANDLE KNIVES

If desired in place of Hollow Handle Knives make the following reduction from prices in sets with six knives, deduct $3 92

STAINLESS BLADES IN HOLLOW HANDLE KNIVES

Make the following addition to printed prices. In sets with six knives, add $1 94

2-PIECE SETS

In Super Cases

Sugar Shell and Butter Knife	$3 20
Educator Spoon and Fork	2 28
Berry Shell and Cold Meat Fork	5 64
H H Salad Set, Olivewood Tines	8 48

3-PIECE SETS

In Super Cases

Child's Spoon, Fork, Flat Knife	$3 50
Child's Spoon, Fork, H H Knife	4 22
Educator Spoon, Fork, H H Knife	4 84

12-PIECE KNIFE AND FORK SETS

In Super Cases

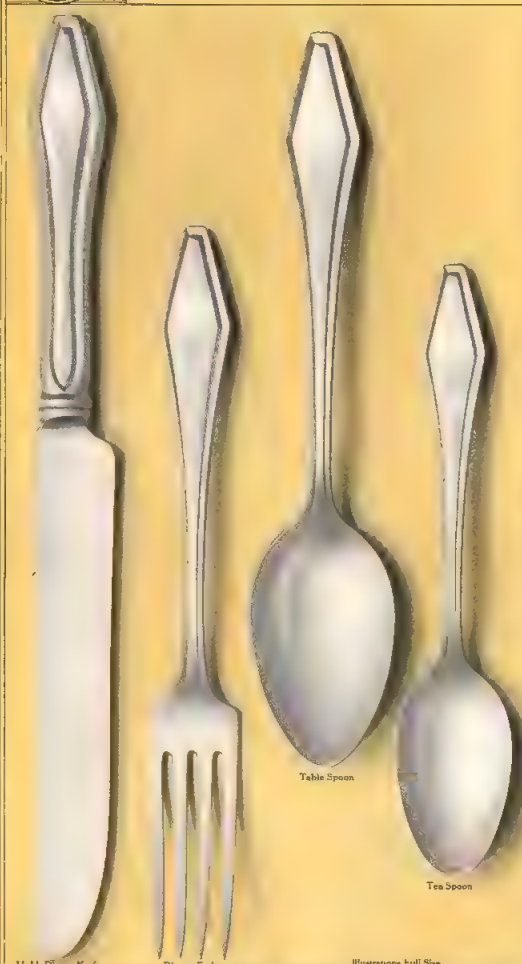
Dinner Set—H H Knives	$20.76
Breakfast Set—H H Knives	20.34

H & E-6-23

INTERNATIONAL SILVER CO.

HOLMES & EDWARDS

NEWPORT PATTERN



Illustrations Full Size

SUPER PLATE—INLAID

Tea Spoons	Plain Box	$8.36 doz.
Tea Spoons	Super Case or Roll	9 20 doz.
Dessert Spoons	Plain Box	16 16 doz.
Dessert Spoons	Super Case or Roll	17 12 doz.
Table Spoons	Plain Box	16.68 doz.
Table Spoons	Super Case or Roll	17 72 doz.
Soup Spoons (Round Bowl)	Plain Box	16.68 doz.
Soup Spoons (Round Bowl)	Super Case or Roll	17 72 doz.
Breakfast Forks	Plain Box	16 16 doz.
Breakfast Forks	Super Case or Roll	17 12 doz.
Dinner Forks	Plain Box	16.68 doz.
Dinner Forks	Super Case or Roll	17 72 doz.

SPOONS

Sugar	Super Case or Bag	$1 50 each
Coffee (Demi Tasse)	Super Case	4 16 six
5 O'clock Tea or Sherbet	Plain Box	4 16 six
5 O'clock Tea or Sherbet	Super Case or Roll	4 60 six
Orange or Grape Fruit	Super Case	5 52 six
Bouillon	Super Case	7 76 six
Educator (Short Handle)	Super Case	1 14 each
Berry or Salad, Serving	Super Case	3 42 each
Iced Tea or Parfait	Plain Box	6.06 six
Iced Tea or Parfait	Super Case	6 74 six
Baby's (Bent Handle)	Super Case	1 14 each
Olive	Super Case	1 90 each

FORKS

5 O'clock Tea	Plain Box	$5 72 six
5 O'clock Tea	Super Case or Roll	6 14 six
Oyster	Super Case	5 50 six
Pickle	Super Case	1 58 each
Ice Cream	Super Case	6.66 six
Cold Meat or Salad, Serving	Super Case	2 21 each
Salad, Individual	Super Case	8 34 six
Educator (Short Handle)	Super Case	1 4 each

KNIVES

Butter	Super Case or Bag	$1.69 each
Butter Spreaders	Super Case	6.84 six

LADLES

Mayonnaise	Super Case	$1 77 each
Whipped Cream	Super Case	2 04 each
Gravy	Super Case	2.67 each
Soup	Super Case	8.21 each

SPECIAL SERVING PIECES

Jelly Server	Super Case	$1 90 each
Sugar Tongs	Super Case	2 15 each
Tomato or Egg Server	Super Case	3 61 each
Cake or Pastry Server	Super Case	2.21 each

SILVERWELD KNIVES

Super Case or Roll . . . . . $16.68 doz.

HOLLOW HANDLE CUTLERY

Dinner Knives	Super Case or Roll	$24.80 doz.
Dinner Knives, Stainless	Super Case or Roll	28.68 doz.
Breakfast Knives	Super Case or Roll	24 52 doz.
Breakfast Knives, Stainless	Super Case or Roll	28.40 doz.
Fruit Knives	Super Case	24.80 doz.
Fruit Knives, Stainless	Super Case	28.68 doz.
Pie Server	Super Case	4.56 each

HOLLOW HANDLE CARVING SETS

Extra per set for Stainless Blades) $1 36 set

3-Pc. Game Set, 7" Blade	Super Case 15.64 set
2-Pc. Game Set, 7" Blade	Super Case 11 04 set
2-Pc. Steak Set, 6" Blade	Super Case 8 46 set

SILVERWELD SOLID HANDLE KNIVES

If desired in place of Hollow Handle Knives make the following reduction from prices:
In sets with six knives, deduct $3 92

STAINLESS BLADES IN HOLLOW HANDLE KNIVES

Make the following addition to printed prices:
In sets with six knives, add $1 94

2-PIECE SETS
In Super Cases

Sugar Shell and Butter Knife	$3 20
Educator Spoon and Fork	2 28
Berry Shell and Cold Meat Fork	5 64
H. H. Salad Set, Olivewood Tines	8 46

3-PIECE SETS
In Super Cases

Child's Spoon, Fork, Flat Knife	$3 30
Child's Spoon, Fork, H. H. Knife	4 22
Educator Spoon, Fork H. H. Knife	4 84

12-PIECE KNIFE AND FORK SETS
In Super Cases

Dinner Set H. H. Knives	$20 76
Breakfast Set—H. H. Knives	20 34

H & E-6-23

INTERNATIONAL SILVER CO.

STANDARD WHEREVER GAME FISH LIE
FISHING RODS AND FISHING TACKLE

NO. 323 N REEL
Nickel plated, double multiplier, 60 yard.

DEFIANCE ENAMELED LINES
Transparent fish, black and white braided from the highest grade pure silk, flexible and strong. No. 980.

SPECIAL DIVIDED WING TROUT FLY
For light fishing, upright wings. Pennell hooks, best gut. All patterns. No. 1000.

In its plants at Utica and Rome, N. Y., the Horrocks-Ibbotson Company manufactures more different kinds of fishing tackle than any other concern in the world. The sporting goods buyer will find his tackle needs accurately and carefully described in our 130 page catalogue.

Some of Our Products

Split bamboo, steel, lancewood, greenheart, and cane fishing rods, enameled and silk lines, cotton and linen lines, reels, single action, multiplying, Y. & E. and Utica automatic, fish and frog spears, landing bows, snelled hooks, trout and bass flies, baits of all kinds, Saranac sinkers, etc., etc.

Horrocks-Ibbotson Co.
Utica, N. Y.
"Manufacturers of Largest Line of Fishing Tackle in the World"

BRAIDED COTTON LINE—84 Ft. Hanks
Put up one dozen to a box, six hanks connected. Best quality. Green mottled. Line guaranteed to be best and heaviest 84 foot braided cotton on the market. No. 281.

UNKLD CASTING LINE
Mahogany brown, speckled with dark green, the easiest selling casting line on the market, put up 25 yards on a spool, four connected, No. 86.

COLORADO SPINNER WITH FLY
Spinner in size No. 10, ⅝ inch, with ½ dozen best assorted flies on card, including Professor Royal Coachman and Hardies No 20

FINIALS and CRESTINGS (Continued)

Souther (E. E.) Iron Co., Kienlin & Hamburger, St. Louis, Mo.
Van Noorden (E.) & Co., 100 Magazine, Boston, Mass.
Wheeling Steel Corp., Wheeling, W. Va.
Willis Mfg. Co., Galesburg, Ill.

FINISH, Linoleum

Alleman's Lustre—See Kenosha Chemical Co.
Boyle (A. S.) Co., 1084 Dana Av., Cincinnati, O. "Old English"
Ferdinand (L. W.) & Co., 152 Kneeland, Boston, Mass.
Kenosha Chemical Co., Kenosha, Wis. "Alleman's Lustre"
★For descriptive data of the above, see index on page 6
Old English—See Boyle (A. S.) Co.

FINISHED NUTS—See Nuts, Finished

FIRE BELLS—See Bells, Church, Fire

FIRE CLAY—See Clay, Stove

FIRE DOOR FITTINGS—See Fixtures, Door, Fire

FIRE DOOR FIXTURES—See Fixtures, Door, Fire

FIRE ESCAPES

(See also Iron Work, ornamental)

Meyers (Fred J.) Mfg. Co., Hamilton, O.
★For descriptive data of the above, see index on page 6

FIRE EXIT BOLTS—See Bolts, Door, Panic

FIRE EXTINGUISHERS—See Extinguishers, Fire

FIRE PAILS—See Pails, Fire

FIRE POKERS—See Pokers, Stove

FIRE POTS—See Furnaces and Torches, Gasoline or Kerosene

FIRE SHOVELS—See Shovels, Fire

FIREARMS BRUSHES—See Brushes, Firearms

FIREARMS SIGHTS—See Sights, Firearms

FIRELESS COOKERS—See Cookers, Fireless

FIREMEN'S AXES—See Axes, Firemen's

FIREPLACE ANDIRONS—See Andirons, Fenders and Grates

FIREPLACE ASH DUMPS—See Dumps, Ash

FIREPLACE DAMPERS—See Dampers, Fireplace

FIREPLACE FENDERS—See Fenders, Fireplace; also Andirons, Fenders and Grates

FIREPLACE GRATES—See Andirons, Fenders and Grates

FIREPLACE HEATERS—See Heaters, Fireplace

FIREPLACE SCREEN CLOTH—See Cloth, Wire

FIREPLACE SCREENS—See Screens, Fireplace

FIREPLACE SPARK GUARDS—See Guards, Spark, Fireplace

FIREPLACE WOOD BASKETS—See Baskets, Fire Place, Wood, Etc.

FIREWORKS

Connecticut Fireworks Co., West Haven, Conn.
Consolidated Fireworks Co., 22 Park Pl., New York, N. Y. "Unexcelled"
Conti Fireworks Co., New Castle, Pa.
Diehl (H. P.) Co., Lawrenceburg, Ind.
Hunt (E. S.) & Sons Co., Weymouth, Mass.
Los Angeles Fireworks Co., Los Angeles, Cal.
Pain's Fireworks Co., 18 Park Pl., New York, N. Y.
Rochester Fireworks Co., Rochester, N. Y.
Unexcelled—See Consolidated Fireworks Co.
Victory Sparkler Co., Elkton, Md.
Western Fireworks Co., Denver, Colo.

FIREWORKS, Toy

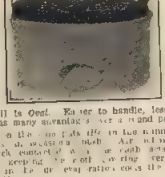
Kalamazoo Mfg Co., Kalamazoo, Mich. "Kazoo Go-Bang"
Kazoo Go-Bang—See Kalamazoo Mfg. Co.

FISH BAITS, Artificial—See Baits, Fish, Artificial

FISH BAITS, Preserved—See Baits, Fish, Preserved

BANTA MINNOW PAIL

Self-Cooling and Aerating Keeps the Minnows Alive and Squirming



The Banta Pail is Cool. Easier to handle, less likely to get bumped and has many advantages over a round pail. An air cooled minnow pail keeps life in the minnows. All that is necessary is to immerse pail in water. Air holes freshen the water. A wick connects with water and keeps air chamber moist, keeping the minnows alive.

Who wants a dead minnow, anyway?

We will be glad to give you full information about this pail. Just drop a line for details. For descriptive data about other popular Abbey & Imbrie lines see index on page six of this cata.og.

"Fishing Tackle Made Right for Fishing"

ABBEY & IMBRIE

97 Chambers St. New York

EXCLUSIVELY WHOLESALE—All retail orders and inquiries referred to our dealers

FISH BASKET STRAPS—See Straps, Fish Basket

FISH DECOYS, Spearing—See Decoys, Fish, Spearing

FISH FOOD—See Food, Fish

FISH GLUE—See Glue, Fish

FISH HOOK ADJUSTERS—See Adjusters, Fish Hook

FISH HOOKS—See Hooks, Fish

FISH KNIVES—See Knives, Fish

FISH NETS—See Nets, Fish

FISH PLANKS—See Planks, Steak and Fish

FISH SCALERS—See Scalers, Fish

FISH STRINGERS—See Stringers, Fish

FISH TRAPS—See Traps, Fish

FISHERMEN'S BASKETS—See Baskets, Fishermen's

FISHING BAIT CANS—See Cans, Bait

FISHING BUGS—See Flies, Fishing

FISHING FLIES—See Flies, Fishing

FISHING FLOATS—See Floats, Fishing

FISHING JACKETS—See Jackets, Hunting and Fishing

FISHING LINE COLOR PRESERVATIVES—See Preservatives, Color, Fishing Line

FISHING LINE LEADERS—See Leaders, Gut, Fishing

FISHING LINES—See Lines, Fishing

FISHING POLES—See Poles, Bamboo; also Rods, Fishing

FISHING REEL BRAKES—See Brakes, Reel, Fishing

FISHING REEL CASES—See Cases, Reel

FISHING REEL DRAGS—See Drags, Reel, Fishing

FISHING REELS—See Reels, Fishing

FISHING ROD CASES—See Cases, Rod

FISHING ROD CEMENT—See Cement, Rod, Fishing

FISHING ROD COVERS—See Covers, Rod

FISHING ROD GUIDES—See Guides, Fishing Rod

FISHING ROD TIPS—See Tips, Fishing Rod

FISHING RODS—See Rods, Fishing

FISHING SEINES—See Seines, Fishing

FISHING SPEARS—See Spears, Fishing

FISHING SPOONS and SPINNERS—See Spoons and Spinners, Fishing

FISHING SWIVELS—See Swivels, Fishing

FISHING TACKLE—See article desired

FISHING TACKLE ASSORTMENTS—See Assortments, Tackle, Fishing

FISHING TACKLE BOXES—See Boxes, Fishing Tackle

FITTINGS, Boiler

Walworth Mfg. Co., 88 Pearl, Boston, Mass.

FITTINGS, Compression

Lincoln Brass Wks., 2067 12th, Detroit, Mich. "Lincolnette"
★For descriptive data of the above, see index on page 6
Lincolnette—See Lincoln Brass Wks.

FITTINGS, Drainage

Detroit Brass & Malleable Wks., 1177 Holden, Detroit, Mich.
Walworth Mfg. Co., 88 Pearl, Boston, Mass.

FITTINGS, Fire Door—See Fixtures, Door, Fire

FITTINGS, Furnace—See Pipe and Fittings, Furnace

FITTINGS, Greenhouse

Central Fdry. Co., 90 West, New York, N. Y.
Crane Co., 836 S. Michigan Av., Chicago, Ill.
Evans (John A.) Co., Richmond, Ind.
Hitchings & Co., Elizabeth, N. J.

FITTINGS, MAST RADIO—See Radio Mast Fittings

FITTINGS, Pipe

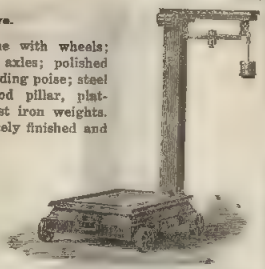
A. J. Nipple & Pipe Cutting Co., 171 Mercer, New York, N. Y.
Acheson Mfg. Co., Rankin, Pa.
American Foundry & Construction Co., 4700 2d Av., Pittsburgh, Pa.
Atkinson Co., Rochester, N. Y.
Behrer & Co., 81 Beekman, New York, N. Y.
Belfield (H.) Co., 435 N. Broad, Philadelphia, Pa.
Berger Mfg. Co., Canton, O. "Berloy"
Berloy—See Berger Mfg. Co.
Bonney Forge & Tool Wks., Allentown, Pa.
Buffalo Nipple & Mach. Co., 335 Glenwood Av., Buffalo, N. Y.
Builders Iron Foundry, Providence, R. I.
Campbell, Lewis, Boyertown, Pa.
Chicago Nipple Mfg. Co., 908 W. Lake, Chicago, Ill.
Commonwealth Brass Corp., 5761 Commonwealth Av., Detroit, Mich.
Crane Co., 836 S. Michigan Av., Chicago, Ill.
★For descriptive data of the above, see index on page 6
Dart (E. M.) Mfg. Co., Providence, R. I.
Detroit Brass & Malleable Wks., 1177 Holden, Detroit, Mich.
Durat Mfg. Co., 119 Chambers, New York, N. Y.
Fretz (S. S.) Jr. & Co., Bedgley Av. & 23d, Philadelphia, Pa.
Gillette-Vibber Co., New London, Conn
Illinois Malleable Iron Co., 1301 Diversey Blvd., Chicago, Ill.
Imperial Brass Mfg. Co., 524 S. Racine Av., Chicago, Ill.
Jarecki Mfg. Co., Erie, Pa.
Kelly & Jones Co., Greensburg, Pa.
Kewanee—See Walworth Mfg. Co.
Laughlin (Thos.) Co., Portland, Me.
Liberty Iron Pipe & Nipple Wks., 133 Center, New York, N. Y.
Lincoln Brass Wks., 2067 12th, Detroit, Mich
★For descriptive data of the above, see index on page 6
Luckenheimer Co., Beekman & Waverly Sts., Cincinnati, O.
M. I. F. Co.—See Malleable Iron Fittings Co.
McDonald (A. Y.) Mfg. Co., Dubuque, Ia.
McNab & Harlin Mfg. Co., 110 William, New York, N. Y.
McRae & Roberts Co., 100 S. Campbell Av., Detroit, Mich.
Malleable Iron Fittings Co., Branford, Conn. "M. I. F. Co."
Michigan Lubricator Co., 3648 Beaubien, Detroit, Mich.
Morse (Andrew J.) Son Co., 221 High, Boston, Mass.
Newark Tube & Metal Wks., 560 Ferry, Newark, N. J.

PORTABLE

Howe.

Cast iron frame with wheels; steel full length axles; polished brass beam and sliding poise; steel bearings; hardwood pillar, platform and cap, cast iron weights.

This scale is nicely finished and extra good value.



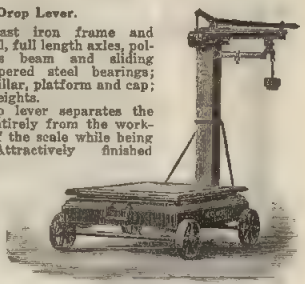
Nos.	30	28	24
Capacity, lbs.	600	1,000	1,500
Platform, inches	16x24	17x26	21x30
Weight, lbs.	180	235	330
Each	$33.00	$43.00	$60 00

Howe.

Drop Lever.

Heavy cast iron frame and wheels; steel, full length axles, polished brass beam and sliding poise; tempered steel bearings; hardwood pillar, platform and cap; cast iron weights.

The drop lever separates the platform entirely from the working parts of the scale while being loaded. Attractively finished throughout.

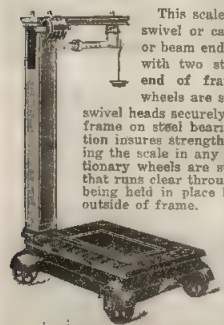


Nos.	85	84	82	79
Capacity, lbs.	1,000	1,500	2,000	2,500
Platform, in.	17x26	21x30	23x32	26x34
Weight, lbs.	295	400	450	500
Each	$53.00	70.00	90.00	100.00

One in a case.

Cyclo.

Blue Ribbon Ball-Bearing Swivel Wheel Scales.



This scale is constructed with two swivel or castor wheels at the front or beam end of scale frame combined with two stationary wheels at rear end of frame. The front swivel wheels are supported on ball bearing swivel heads securely held in front corners of frame on steel bearing pins, which construction insures strength as well as ease in moving the scale in any direction. The rear stationary wheels are supported on a steel axle that runs clear through under frame, the axle being held in place by two hexagon nuts on outside of frame.

By use of this novel swivel wheel construction the operator is able to move the scale in any direction with the utmost ease.

The main frame, platform and levers are made of smooth grey iron of ample weight and strength, all iron parts being finished in black Japan.

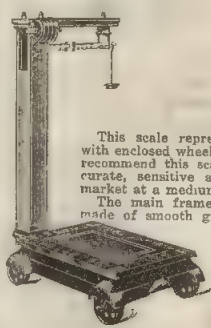
Our Cyclo scales are fitted with hardened flexible lever bearing loops and platform bearing feet. The beam and crescent shaped sliding poise are of solid brass, highly polished. All pivots are of best tool steel, carefully tempered and ground to a knife edge.

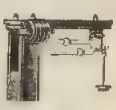
Wood parts are of the choicest selection obtainable, well finished and handsomely striped in gilt.

Nos.	87	88	89
Capacity, pounds	600	800	1000
Beams graduated, lbs.	50x¼	50x¼	100x½
Weight, each, lbs.	150	165	175
Each	$37.00	39.50	46.00

One in a crate.

New Detroit Weight.





Double Beam

This scale represents a high-grade scale with enclosed wheels and fancy platform. We recommend this scale as being the most accurate, sensitive and durable scale on the market at a medium price.

The main frame platform and levers are made of smooth grey iron of ample weight and strength.

Iron parts finished in black Japan.

Wood parts highly finished in dark blue and handsomely striped in gilt.

Beams and poise are of solid brass finely milled and highly polished.

Nos.	75	76	77
Platform, ins.	16½x22	16½x24	17x24½
Capacity, lbs.	600	800	1,000
Beam graduated, lbs.	50x¼	50x¼	100x½
Weight, about, lbs.	150	160	170
Each	$38.00	$43.00	$45.10
Nos.	**77DB**	**78**	**79**
Platform, ins.	17x24½	17½x25	18x26
Capacity, lbs.	1,000	1,200	1,500
Beam graduated, lbs.	100x½	100x½	100x½
Weight, about, lbs.	175	180	200
Each	$47.00	$45.10	$49.60

Packed one in a box, with directions for erecting.

PLATFORM SCALES

New Detroit Weightless.

This scale represents a high-grade scale with enclosed wheels and fancy platform. We recommend this scale as being the most accurate, sensitive and durable scale on the market at a medium price.

The main frame platform and levers are made of smooth grey iron of ample weight and strength.

Iron parts finished in black Japan.

Wood parts highly finished in dark blue and handsomely striped in gilt.

Beams and poise are of solid brass finely milled and highly polished.

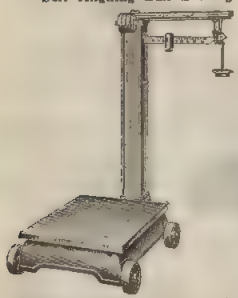
NOTE.—Even balance as shown in above illustration is not used on 600 and 800 capacity scales. Beam rod connects direct with beam.

Nos.	1115	1116	1116½
Capacity, lbs.	600	800	1,000
Size of platform, ins.	16½x24	17x24½	17½x25
Weight, each, lbs.	165	170	170
Each	$62.50	$66.00	$69.00

One in a crate.

GASTON.

Self Aligning Ball Bearing Portable Scale.



Single beam with wheels.

A general purpose scale that will weigh accurately from no load, to the full capacity of the scale. Beam graduated in quarter-pounds marked to 50 pounds on the 600 pound size. All other sizes one-half pound graduations to 100 pounds.

No. 601—Capacity 600 lbs. Platform size 16½x24½ inches. Each $27.00

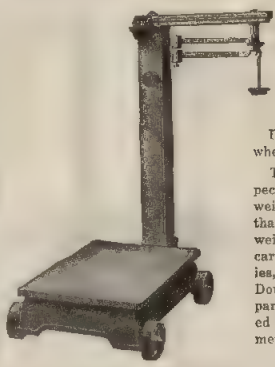
No. 801—Capacity 800 lbs. Platform size 17x25 inches. Each 31.00

No. 1001—Capacity 1,000 lbs. Platform size 18x26 inches. Each 35.50

No 1201—Capacity 1,200 lbs. Platform size 18½x26½ inches. Each 40.00

No. 1501—Capacity 1,500 lbs. Platform size 18½x26½ inches. Each 45.00

Self Aligning Ball Bearing Portable Scale.



Double beam with wheels.

This scale is especially adapted to weighing conditions that require a tare weight to be taken care of. Creameries, etc., find the Double Beam Scale particularly adapted to their requirements.

No 602—Capacity 600 lbs. Platform size 16½x24½ inches. Each $32.00

No. 802—Capacity 800 lbs. Platform size 17x25 inches. Each 36.00

No. 1002—Capacity 1,000 lbs. Platform size 18x26 inches. Each 40.00

No. 1202 Capacity 1,200 lbs Platform size 18½x26½ inches. Each 45.00

Self Aligning Ball Bearing Portable Scale.

With full capacity weightless beam.

No loose weights to handle or become lost.

This is one of the most convenient portable scales ever put upon the market. The uper bar is graduated in ½-lb. marks up to 100 lbs., while the lower bar is notched in 100 lb. notches to full capacity of the scale. The beam is of brass, highly polished and delicately sealed, and is one of the most sensitive scales over made. We recommend it for use wherever a high grade scale is desired.

No. 603—Capacity 600 lbs. Size of platform 16½x24½ inches. Each $38.50

No. 803—Capacity 800 lbs. Size of platform 17x25 inches. Each 41.50

No. 1003—Capacity 1,000 lbs. Size of platform 18x26 inches. Each 45.00

No. 1203—Capacity 1,200 lbs Size of platform 18½x26½ inches. Each 48.00

The Diamond Drilling & Exploration Co.

Office:
House Building, PITTSBURGH, PA.

Telephone—Court 2751

Diamond Core Drilling is our Specialty

The oldest Diamond Drilling Concern in existence.

We Solicit your Business and Guarantee Satisfaction.

Our list of Satisfied Customers is over Fifteen Hundred in number.

Wire your wants at Our expense.

We will satisfy your requirements.

One of Our Diamond Core Drills for Testing Coal Land

Advantages of Test Drilling

It is good business to test coal and mineral lands before going to the expense of erecting costly buildings, sinking shafts and installing machinery.

Numerous instances are known where coal looked good at the outcrop, and after headings had been driven, buildings and machinery contracted for and installed, it was discovered that the coal pinched down to such a thinness as to make it unprofitable to work.

Had these lands been tested by our Diamond Core Drilling outfits, the exact thickness and direction of the coal could have been readily determined and an enormous saving effected, both in time and money spent for mine equipment.

Our equipment for Diamond Core Drilling is modern in every respect. We are prepared to drill test holes to any required depth and of such sizes as best meet conditions.

Our employees have been rendered expert in this line of work through years of service with us and there is no drilling problem too large or too small for us to handle with entire satisfaction to our clients.

H. R. AMELING PROSPECTING CO.

ROLLA, MISSOURI

Diamond Core Drilling

After five years of unsatisfactory operation with drills bought on the market, we decided in 1907 to design and build our own drills. This was not done for the purpose of eliminating a middle man's profits, but was for the purpose of building a drill that would enable us to give better service to our customers.

"Speed and Accuracy" are the two things most appreciated by those who need our service.

Frequent break-downs are annoying to ourselves as well as to our patrons.

To eliminate these break-downs was uppermost in our minds when we designed these drills, by substituting steel in place of cast iron wherever necessary.

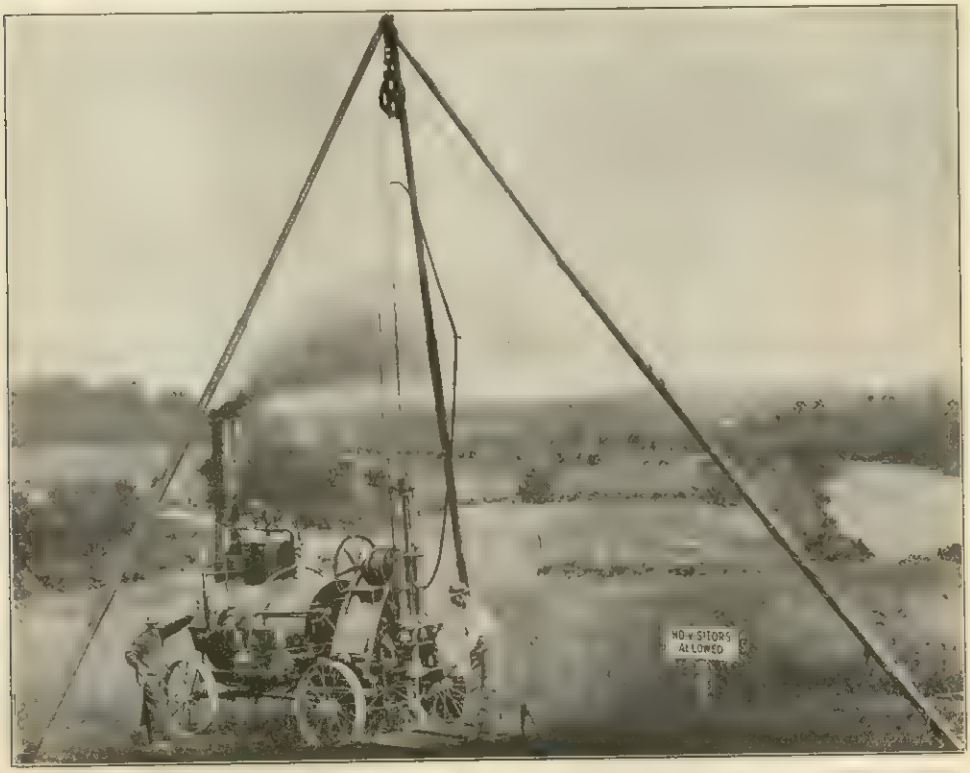
We have many refinements embodied in the construction of our drills. We generate our own electric light current which enables us to operate our drills twenty-four hours of every working day.

We pump water from source of supply direct to drills thereby eliminating the necessity of hauling it by wagon. No Water to Haul when we do your drilling.

Space will not permit to enumerate all the exclusive features in the construction of our drills, but when in need of our service, write us and we feel confident we can add you to our long list of satisfied customers.

20 Years of Continuous Service

Not a Dissatisfied Customer.



Electric Fans and Heaters

Electric Fan

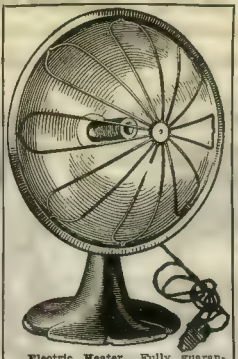
Ideal Electric Fans equipped with polished brass blades, 110 volts, 25 to 60 cycles. Universal motor operates on D. C. or A. C. current.

Ideal Electric Fan. Non-Oscillating type, diameter 9 inches, 4 blades, one speed.

No. 7C32. Each..... 7.25

Ideal Electric Fan. Oscillating type. Diameter 9 inches, 4 blades, 2 speeds.

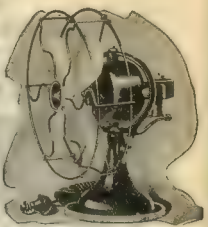
No. 7C34. Each..... 10.00



Electric Heater. Fully guaranteed. The reflector is made of pure copper 12½ inches in diameter, highly polished and lacquered. Back and base finished in dark green baked enamel. Nichrome wire heating element which operates on either D-C or A-C current. Complete with 6 foot cord and two piece plug.

No. 7C41. Each..... 3.50

Electric Fan



Ideal Electric Fans equipped with 110 volt, 60 cycles, **A. C. motor,** polished brass blades. Perfection in design, efficiency in make and service are strong points found in these fans.

Non-Oscillating type, diameter 12 inches, 4 blades, 3 speeds.

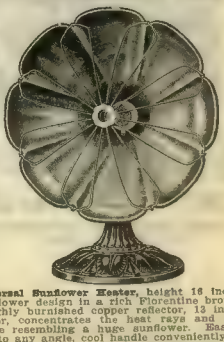
No. 7C35. Each..... 14.00

Thermax Electric Heater

Electric Heater. Burnished Copper reflector. Back and base bronze enameled finish. Screw base element. Heavy wire removable guard. Height 18 inches. Diameter of reflector 12 inches. Complete with 6 foot connecting cord and separable attachment plug.

No. 11G57. Each..... 4.90

Universal Sunflower Heater



Universal Sunflower Heater, height 16 inches, is of sunflower design in a rich Florentine bronze finish, highly burnished copper reflector, 12 inches in diameter, concentrates the heat rays and casts a radiance resembling a huge sunflower. Easily adjusted to any angle, cool handle conveniently placed on back of reflector. Heating element screws into a lamp bulb for decorative and illuminating purposes. Strong wire guard easily removed, affords ample protection. Complete with 8 ft. heater cord and connecting plug. Each in carton.

No. 11G36. Each..... 6.98

ICE SCALES, SPRING BALANCES AND GRAIN TESTERS

ICE SCALE

Imported

No. 300—Capacity 300 lbs., extra quality, double hook; weight per dozen, 25 pounds ..... Per Dozen, $7 40

ICE BALANCES

Improved Excelsior

Heavy japanned malleable iron case; figures and lines stamped in metal; regulated by set screw in bottom of case.

Nos.	To Weigh	Length Over All	Per Doz
420	200 lbs. by 2 lbs.	16 in.	$120 00
403	300 lbs. by 5 lbs.	16½ in.	132 00

One in a box; weight, 6 lbs.

SPRING BALANCES.

Light.

Japanned stamped steel case, brass front figures and lines stamped in metal; tinned ring and hook.

Nos.	To Weigh	Length Over All	Per Doz.
3	25 lbs. by ½ lb.	7½ in.	$4.00

One dozen in box; weight, 2 lbs.

51	50 lbs. by 1 lb.	10 in.	7 70

Six in a box; weight 4 lbs.

Heavy.

Japanned stamped steel case, brass front, figures and lines stamped in metal; tinned ring and hook.

Nos.	To Weigh	Length Over All	Per Doz
81	25 lbs. by ½ lb.	14 in.	$10 40

Six in a box; weight, per dozen, 5 lbs.

84	50 lbs. by 1 lb.	12 in.	20 40

Three in a box, weight, per dozen, 10 lbs.

Tubular Pattern.

Heavy japanned round case, brass front; figures and lines stamped in metal.

No. 273—50 lbs. by ½ lb., 14½ inches long.....Per Dozen, $25 20

Three in a box, weight per dozen, 26 lbs.

SPRING BALANCES.

Pelouze Heavy.

Japanned stamped steel case; figures and lines plainly stamped in metal; japanned ring and exposed coil spring.

No. 150P—150 lbs. by 1 lb. Per Dozen, $58 00

Half dozen in a box; weight, 12 lbs.

Pelouze Dairy.

Large circular dial. A loose pointer, regulated by a thumb screw, may be set at any point on the dial, to take the tare of milk pails, etc. Black enameled steel case, polished brass face, stamped-in figures and lines, black enameled.

No. D60—40 lbs. by 1/10 lb.; diameter of face 7 inches, length over all 14 inches.

.....Per Dozen, $8 00

One in a box, weight, 3¼ lbs.

GRAIN TESTER.

Buffalo.

So constructed that when cup is empty the beam balances at zero. On the beam there are three rows of marking, which indicate the number of pounds a sample will weigh to the bushel, the exact weight of sample; per cent of loss after cleaning.

No. 1767—2 quarts, brass; weight, 5¼ pounds ..... Each, $38 00

One in a box.

INGERSOLL WATCHES

Famous The World Over

You Get More Sales and More Profits Because You Have a Line of Watches, Each Model Advertised, Not Merely One or Two Numbers.

OUR TERMS ARE NET CASH

Midget Radiolite

Costs You 2.80 Sells for 4.25

No. 1W55. Ingersoll Watch, "Midget Radiolite." The Midget watch with a radiolite dial. Tells time in the dark as well as the light.
Each 2.80

Waterbury

Costs You 3.30 Sells for 5.00

No. 1W57. Ingersoll Watch, "Waterbury," a jeweled watch at an economy price. Size 12, jeweled balance.
Each 3.30

Waterbury Radiolite

Costs You 3.96 Sells for 6.00

No. 1W58. Ingersoll Watch, "Waterbury Radiolite." The Waterbury with a luminous dial. Tells the time in the dark as well as in the light
Each 3.96

A Discount of 2½% Will Be Allowed on Orders for 3 Dozen Assorted

Reliance

Costs You 4.61 Sells for 7.00

No. 1W60. Ingersoll Watch, "Reliance." 7 jewels, bridge model. The result of Ingersoll methods applied in the fine watch field.
Each 4.61

Wrist Radiolite

Costs You 2.97 Sells for 4.50

No. 1W59. Ingersoll Watch, "Wrist Radiolite," a very serviceable watch for women, boys, sportsmen, etc.
Each 2.97

Reliance Gold Filled

Costs You 6.59 Sells for 10.00

No. 1W61. Ingersoll Watch, "Reliance Gold Filled." Your choice of six designs—one shown above. Case guaranteed for ten years.
Each 6.59

Thin Model Gold Plated Watch

1.65 Each 1.65 Each

Latonia Watch, 16 size, open face, gold plated, thin model, plain polish, bassine case, jointed back, snap bezel antique bow, stem wind and stem set, with a nickel lever escapement movement, second hand and fancy dial.

No. 2W44. Each..... 1.65

Railroad Style Watch

Men's Watch, 18 size, open face, screw back and bezel, 5-year gold filled case, engine design, fitted with a 21 jewel Trans-Atlantic Swiss movement exposed winding wheel.

No. 6W97. Each..... 5.15

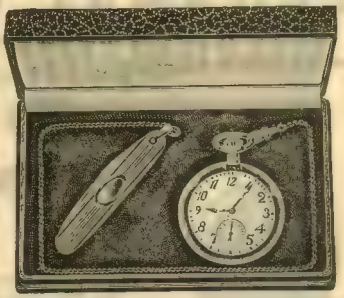
Men's Watch. As above, 17 jewel North Shore movement.

No. 4W46. Each..... 4.65

Men's Watch. As above, 7 jewel North Shore movement.

No. 4W45. Each..... 4.40

Gold Plated Watch Outfit

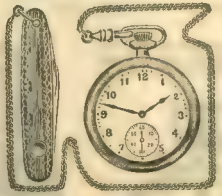


Watch Outfit, thin model, open face, gold plated watch, lever escapement, gold and silver dials, complete with gold plated knife and chain in velvet lined box.

No. 10W7. Each..... 2.25

Watch Outfit

Watch—Chain—Knife



Watch Outfit, 16 size, open face, thin model, gold dial, stem wind and pendant set watch, gold plated knife and chain.

No. 10W16. Each..... 1.85

Leonard Radiolite American Made Wrist Watch, nickel plated case, luminous dial, leather Kitchener strap, very serviceable for men, boys, sportsmen, etc.

No. 1W24. Each..... 2.75

IRWIN FOUNDRY & MINE CAR CO.

Factory and Office: IRWIN, PA.

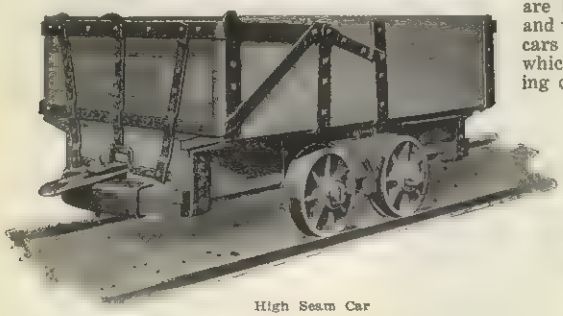
Manufacturers of Irwin Mine Cars and Wheels

Products

Mine Cars—Any type; Mine Car Wheels, Plain or Self-Oiling, also Roller Bearing; Mine Car Trucks; Mine Car Irons; Hitchings—all types; Cast Iron Frogs, Turnouts, Sheave Wheels to six feet in diameter; Miscellaneous Castings up to two tons.

Mine Cars

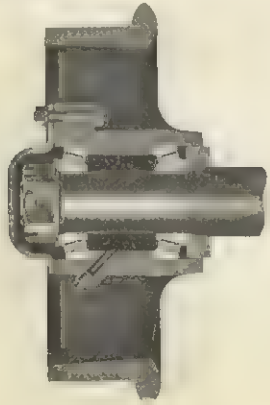
We build mine cars of steel, wood or composite, in all capacities and for all track gauges. The line is so complete that we are limited to the illustration of but two styles.



High Seam Car

The car above is our standard three-ton wooden construction, while the one at the bottom of the next column is of 2½ tons capacity, with wood bottom and steel sides. Both cars have steel bumpers, channel bar trucks, dust-proof bearings, cold rolled steel axles. Both cars have "Sensenich" wheels.

Either car will give excellent service at small maintenance cost.



Timken Roller Bearing Wheel

Roller Bearing Wheels

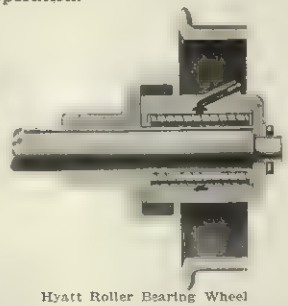
We manufacture wheels equipped with either Hyatt or Timken Roller Bearings.

Self-Oiling Wheels

All types, including open and closed end wheels having spacious oil chambers, capable of retaining oil or grease for long periods.

Irwin Wheels are giving the longest possible service under some of the most severe conditions known to the mining industry.

Irwin Mine Cars, of either wood or steel, are built to suit any conditons encountered, and we will gladly consult with you and design cars which will meet any unusual conditions which may arise in connection with any mining operation.



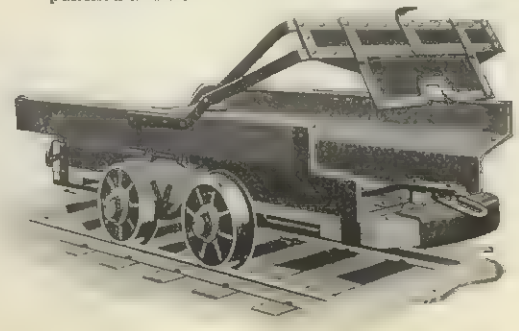
Hyatt Roller Bearing Wheel

Other Wheels

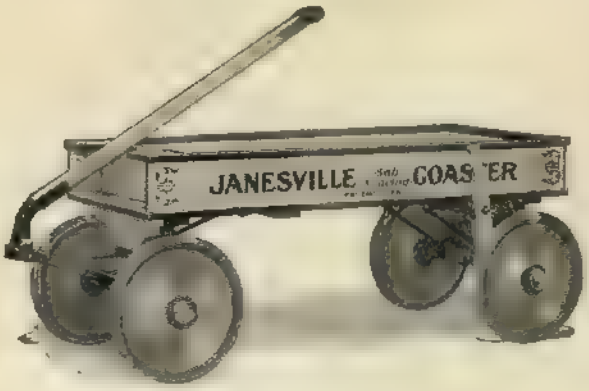
If you have a wheel of any special design, or have any preference for some standard design, we would be pleased to quote prices.

Engineering Service

Our Engineering Department will gladly consult with you and design a car to suit your conditons. If you build your own cars we can furnish irons punched and bent.



Low Seam Steel Side Car



The Head of the Janesville Line

Whenever you find Hardware Men discussing the "Toy Business," inevitably Janesville is favorably mentioned.

Janesville was the first to advertise the coaster wagon to the boy and his parents and we like to think that in doing so, we were and are of some aid in opening up a big market for the Hardware Retailer.

The enduring Quality that originally made the wagon popular is still the most potent factor in sales, not only on the most complete wagon line now being shown, but in Sroots and Skudder Car, the latter being exclusive with us.

JANESVILLE PRODUCTS CO.

Janesville, Wisconsin

Say you saw it in GOOD HARDWARE

TARGETS

WHITE FLYER

White Flyer—570 in a barrel Weight per barrel, 155 lbs. ..... Per 1000 $20 00

TARGET TRAPS

WESTERN AUTOMATIC

Western Automatic—Simple, durable and easy of operation ..... Each $50 00

Double Attachment—Extra ..... Each 20.00

DECOYS

JOHNSON'S FOLDING PAPER

Johnson's ..... Dozen $6.00

Packed one dozen in a heavy manila envelope. Assorted half male and half female. Weight per dozen complete, 4½ lbs.

The Decoy is printed on a heavy grade of jute cardboard, a very tough stock put through a water-proofing process which makes it impossible to absorb moisture. This is made to float by inserting a quarter-inch spruce board, which is dyed water color and is also water-proof. The Decoy is made to retain its upright position in the water by a pendulum weight weighing about an ounce which is attached to the float by means of a 10-in. shiff wire. A string and anchor is attached to one float in each carton as a suggestion.

DECOYS

WOOD

No. 1-S—Solid, white cedar, kiln dried glass eye, perfect coloring. Mallard, teal and sprig.....Dozen $24 00

No. 2-H—Hollow, white cedar, flat bottom, perfect coloring, glass eye. Finest wood decoys made. Stocked in mallards only.....Dozen $48.00

Packed one dozen in a case, assorted male and female. We do not break cases.

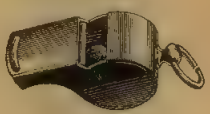
WHISTLES AND CALLS

ECHO CALL

No. 120 ..... Dozen $3 00

One dozen in a box.

REFEREE



Police or Basketball

Referee ..... Dozen $5 00

One dozen in a box.

No. 14—Horn. Medium size. Dozen $7.00

No. 112—Universal, with chain. Small size. .Dozen $3 00

No. 114—Universal, with chain Large size ..Dozen 4.50

One dozen in a box

DUCK, GOOSE AND CROW CALLS

Made in two pieces. Reed is made of hard rubber. Perfect tone, and operates with least effort

Broadbill—Duck Call ..... Dozen $12.00

No. 72-N—Duck Call. Cocobolo, with nickel tip.....Dozen $3.75

No. 70—Allen's Duck Call. Wood shell, metal case....Doz. $9.00
One-half dozen in a box.

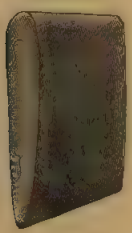
No. 60—Reynolds Double Hard Rubber Duck Call. Doz. $12 00
One-half dozen in a box.

No. 80—Fuller's Goose Call..... Dozen $24 00
One-half dozen in a box.

No. 90—Crow Call . . . . Each $1.00
Ten in a box.

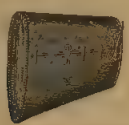
RECOIL PADS

RED RUBBER



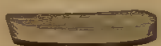
No. 25—10, 12, 16 and 20 gauge.....Dozen $18.00

RUSSET LEATHER



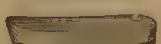
No. 500—To lace .. . Dozen $20.00

HARD RUBBER BACK



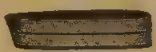
No. HRB—Soft cushion. Screws to stock and can be buffed to fit any gun Size, 5½ in. long, 1⅝ in. wide .. .. Dozen $42.00

SILVER PATTERN



Air Cushion—Soft red rubber cushion and hard black rubber base plate. Hollow cushion, chamber extending from toe to heel. Thickness, ⅞ in... ... .Dozen $36.00

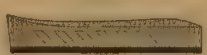
SPONGE RUBBER



PLY	Thickness	DOZEN
2	1 in.	$24.00
3	1½ in.	30.00

These are the softest pads on the market. Made of high-grade rubber in two and three ply. At the base there is a strip of red sheet rubber, which is tacked and cemented to the stock and the sponge rubber in turn is cemented to the red strip. Between the layers of sponge there are strips of red gasket rubber. Special tacks and instructions for attaching furnished with each pad.

ANTI-FLINCH



Anti-Flinch—1 in. thick. .... Dozen $39.00

Made of best grade red rubber, vulcanized on black hard rubber base plate. Oblong holes through soft rubber, slanting at an angle of 45 degrees in line with stock, eliminates upward whip of muzzle and takes up the recoil.

WOODEN DUCKS

Mason.

(We will not break cases.)

Mallards, Canvas Backs, Red Heads, and Blue Bills.

No. 1—Extra quality, glass eyes. Per dozen....$12.50

Premier Model—Hollow.

Painted in natural colors from life, shape of head, bill, arch of neck, etc., modeled from the living bird; ride perfectly upright in the roughest water; made in two sections and connected in such a manner as to prevent any leakage; finest enamel eyes, colored from life.

No. 0—Finest quality clear white pine; assorted mallards, canvas backs, red heads and blue bills. Per dozen. $24.00

DUCK DECOY ANCHORS

South Bend.

Made of cast iron, dull black finish. Has three holes in the bell of the anchor for drainage of water, mud and sand. All surfaces are smooth and rounded. Will hold fast all sorts of duck decoys.

No. 254—Height over all 2¼ inches, width at base 2⅝ inches; weight, 6 lbs. Per dozen $1.80

Open stock.

WADING PANTS AND BOOTS

Wading Pants. **Hip Boots.**

Goodyear Mackintosh.

No. 1—Wading pants with stocking feet. Per pair $20.00

No. 2—Wading pants with boot feet. Per pair 22.00

No. 5 — Hip boots with boot feet. Per pair 17.50

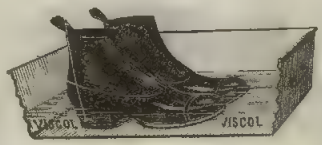
Nos. 1 and 2.

No. 5.

LEATHER WATERPROOFING

Viscol.

A Good Way to Viscolise Shoes.

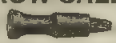


Viscol waterproofs, softens and preserves shoes, harness, belts and everything made of leather. Viscol is not a polish, yet it does not interfere with the polishing of the shoes. The polish on viscolised shoe lasts longer because the Viscol saves the polish from being rubbed off. Waterproofs the shoes, softens the leather, no matter how hard it is, prevents the leather from cracking, makes the shoes wear three times longer.

No. 1—¼ pint tin cans. Per dozen $2.25

No. 2—½ pint tin cans. Per dozen.....$3.69

CROW CALLS



Best Crow Call made. Most natural, easy blowing, easy to operate, to imitate the Crow's language perfectly. With this Crow call anyone is able to induce the Crow to come within close gun reach by simply blowing into the call with a caw, caw, caw, holding call in palm of hand the same as you hold a duck call. Made of fine polished hard rubber. Shooting Crows is great sport. Not alone that it

Ott—Length 3½ inches; weight per dozen,... pounds. Per dozen $9 00

DUCK CALLS

Broadbill.

A Call That Calls.

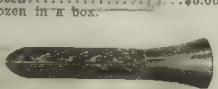
The call is made in two pieces, allowing the reed to be securely fastened to one side by the use of a metal clamp. The reed, which is made of select mica, is carefully treated, rendering it practically indestructible. Should it become necessary to remove foreign matter from the reed, loosen bolt, slip band off, and the parts may be easily separated by the use of a thin knife blade.

Broadbill—Length 5¼ inches. Weight, per dozen, about 1¾ pounds. Per dozen.....$12.00
One in a box.

Union.

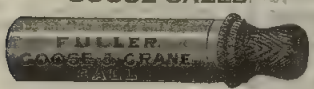
Union Duck Call—Made of cocobola wood, highly polished, this duck call is made in two pieces, banded with nickel plated wire; length 4 inches. Weight, per dozen, about ¾ pound. Per dozen.....$5.00
One dozen in a box.

No. 760—Duck call, cocobola wood, nickel tips. Weight, per dozen 1 pound. Per dozen $5.00



One dozen in a box.

GOOSE CALLS

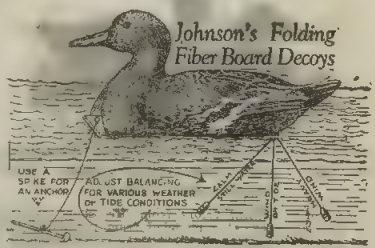


No. 770—Fuller's nickel-plated goose and crane calls. Weight, per dozen, 3 pounds. Per dozen $15.00
One-half dozen in a box.

DECOYS

Folding Paper Ducks.

Johnson's.



The 1922 Mallard Decoys are Larger, Better Shaped and Wonderfully Colored.

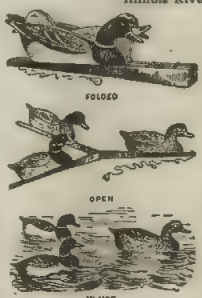
Ducks never fall for decoys the way they fall for these. Printed in natural colors on tough jute fibreboard similar to stock used in high-grade shot gun shells, so thoroughly waterproofed and reinforced that they last indefinitely. They have every appearance of a full, round duck body, ride perfectly in any weather and the slightest wind keeps them moving, making them most effective.

The 5-16 inch cedar float, also waterproofed, slides snugly inside the body to spread and float it. A balancing device attached to the float makes tipping impossible. Suggestions for different ways of using printed on the bottom of each decoy.

Johnson's Mallards. Per dozen.....$6.60
Johnson's Blue Bills. Per dozen..... 6.60

Each dozen fit compactly in two canvas bags; weight 6 pounds per dozen.

Illinois River Folding.



Illinois River Folding Duck Decoys are made of wood painted in natural colors on both sides and attached to a wooden float in groups of three. The float is in three pieces and joined at one end with a three-plate hinge so that when extended a bird floats at each extremity. The float sinks below the surface of the water presenting merely the decoys which show up from any angle. They are compact and light in weight and buoyancy is not affected by stray shots. Only one cord and anchor is needed for each group of three decoys. One dozen (8 males, 4 females), including cords and anchors, in a strong carry box.

Illinois River Folding Duck Decoys—Weight, per dozen, net, 8 pounds. Per dozen.....$9.75

JOY MACHINE COMPANY

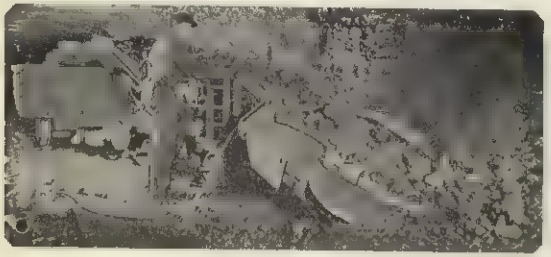
General Offices
PITTSBURGH, PA., U. S. A.

Branches
HUNTINGTON, W. VA.; DENVER, COLO.; EVANSVILLE, IND.
FRANKLIN, PA.

Joy Mechanical Mine Car Loader

Years of successful operation has proven the JOY MECHANICAL MINE CAR LOADER to be the most practical, efficient and economical loading machine yet designed. Performances never before realized have been attained with Joy Loaders.

Built from experience and by practical coal mining men, embodying what is practical in every way and adapted to conditions encountered in the various phases of coal mining.



The Joy Loader in Actual Operation

The JOY LOADER can be used successfully for any of the following purposes: **Driving entries, turning room necks, or break-throughs, working rooms up to 35 feet in width with but a single track, working rooms 45 feet in width with double track, loading from walls into mine cars or onto lateral conveyors.**

The machine is propelled under its own power to any part of the mine.

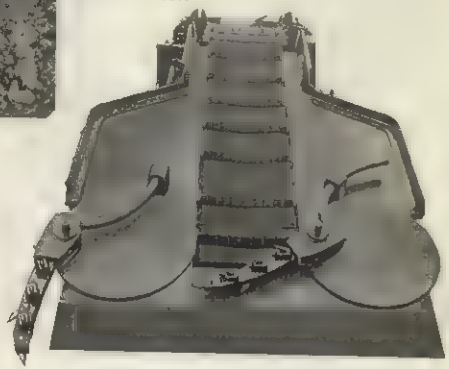
Upon entering a room the track wheels are removed—this takes less than a minute.

Removing the Track Wheels

After the track wheels are removed the loader rests upon its caterpillar tractor and is ready for loading coal.

Easy to Handle

The machine has been developed with special regard to simple and effective operation. Prompt and positive response of every mechanism follows the movement of the controls.

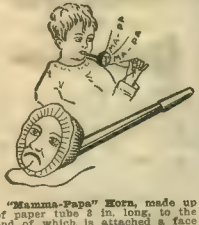


The Joy Digging and Gathering Mechanism

This device gives the Joy Loaders their striking advantage over all other types of mechanical loaders. It **pulls down the coal** that is left standing in a semi-disturbed state after blasting with a conservative use of explosive. It sweeps this coal onto the forward conveyor as fast as it is broken down, clearing a path seven feet wide. It will load slack and small coal or 500 pound lumps with equal efficiency.

Power is transmitted from the driving motor to the gathering and loading mechanism through a very positive acting slip type safety clutch to prevent destruction of parts through overloading from any source, such as the diggers encountering an immovable object. These clutches and other protective devices are of such character as to make it practically impossible to defeat their functioning.

NOISE MAKERS AND JUMBO CANES



"Mamma-Papa" Horn, made up of paper tube 8 in. long, to the end of which is attached a face with movable jaw. Blowing, and at the same time pulling on the string, will enunciate the word "Mamma" or "Papa." Face finished in colors. ¾ gross in box.
No. 14N9.
Per Gross. 4.00 | Per dozen.. .35

CELLULOID CANARY BIRD WARBLER

A beautiful, dainty whistle, nice enough for a ladies' favor, pretty enough for a table decoration and is sufficiently novel to startle the grownups or amuse the children. Length 3½ inches, height 2¼ inches. Consists of a beautiful canary bird made entirely of celluloid in natural colors—with whistle. Put a few drops of water inside and blow. You can imitate the trills, roll and chirp of a real canary. Packed one dozen in box.
No. 32N62.
Per gross.. 8.50 | Per dozen.. .75

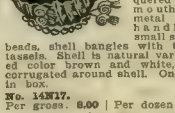
MA-MA HORN "Ma-Ma"

Horn, 7½ in. long, made of heavy board, covered with red, white and blue paper and baby face, with movable lower jaw, held in place by rubber band, inside with string outside. Blowing in, and at the same time pulling on the string, will imitate the words, "Ma-ma" or "Pa-pa." One of the best out. One dozen in box.
No. 14N56.
Per gross. 8.50 | Per dozen.. .75

SHELL HORN

Shell Horn, made of a 2½ in., very prettily colored natural Cowry shell, end bored and fitted with a wooden mouthpiece and reed, blows like a horn, with bangle of two Venetian shells and colored tassels. Two dozen in box.
No. 14N16.
Per gross. 3.50 | Per dozen.. .30

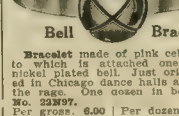
SHELL HORN



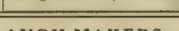
Shell horn, four inches long, 3 inches wide, lacquered tin mouthpiece, metal reed, handle of small strung beads, shell bangles with tufted tassels. Shell is natural variegated color brown and white, ring corrugated around shell. One doz. in box.
No. 14N17.
Per gross. 8.00 | Per dozen.. .70

Cigarette Horn. Perfect reproduction of cigarette. Loud horn inside. Produces plenty fun and noise. One gross in box.
No. 14N40. Per gross..... .75

Cigar Horn Length 4 inches: the exact reproduction of a regular cigar in shape, size and color. Complete with highly colored cigar band. Whistle inside. ½ gross in box.
No. 14N41. Per gross. . . .90



Bracelet made of pink celluloid to which is attached one inch nickel plated bell. Just originated in Chicago dance halls and all the rage. One dozen in box.
No. 22N37.
Per gross. 6.00 | Per dozen.. .55



Flute. Nickel plated. Length 8 inches. Two dozen in box.
No. 13N33.
Per gross. 4.50 | Per dozen.. .40

JUMBO CANES

Covered with Red, White and Blue or Vari-colored paper. They sell everywhere. Price not questioned.

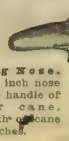
Clown Head. Diameter 3½ inches. Total length of cane 36⅛ inches. 1 dozen in box.
No. 16N75. Per doz. 2.25

Happy Hooligan. Diameter of head 5 inches. Length of cane 36 inches. 1 dozen in box.
No. 16N77. Per doz. 3.75

NEW LAUGH MAKERS

For the Dance, Cotillion, Bazaar, Street Fair, etc. Great, huge, monstrous Canes. Almost as big as your arm. Ludicrous in the extreme. Made of very heavy cardboard rolled in shape of tapered tube.

English Bulldog. Brown color. English monocle. Diameter of head 4½ inches. Length of cane 36 inches. 1 dozen in box.
No. 16N76. Per doz. 3.75



Long Nose. His 9 inch nose is the handle of your cane. Length of cane 36 inches.
No. 16N78. Per doz 3.75

JUSTRITE CARBIDE LAMPS AND LANTERNS

CAP LAMPS

Polished Brass; Burning Capacity 2½ hours.

WIRE VALVE FEED

No. 407—Lamp only, 2¼-inch concave reflector drawn from seamless brass, attached parts are riveted and soldered inside deep-concaved reflector is part of the Lamp, cannot get loose or be broken off; equipped with lighter attachment; height of Lamp, 3¾ inches; diameter of bottom, 2 inches; water tank 1¾ inches diameter, 2¼ inches long, 16 7 candle-power, charge, 2 ounces ½-inch carbide; weight 5 ounces ..... Per Dozen, $18 50

No. 85—With carbide can, otherwise as above ..... Per Dozen, $20 40

No. 57—With extra bottom..Per Dozen, $22 40

POLYGON VALVE FEED

No. 727—Lamp only; 2⅝-inch concave reflector, otherwise as above Per Dozen, $19 00

No. 767 Lamp only; 3 inch saucer-shaped reflector, otherwise as above .... Per Dozen, $19.50

FOR DRIVERS AND WET MINES

POLYGON VALVE FEED

No. 787—Lamp only; 2⅝-inch extra deep concaved nickel silver reflector and removable flame protector which makes flame wind and water-proof ..... Per Dozen, $23 00

VICTOR CAP LAMP

No. 661—Brass Lamp only; 2⅝ inch detachable reflector and brace, with sparker; Polygon valve water feed; weight, 4¾ ounces. . . . Per Dozen, $18 50

No. 666—Brass Lamp only; 3 inch reflector, otherwise as above Per Dozen, $19.50

HALF-SHIFT LAMP

No. 103 Polished Brass Lamp only, equipped with lever valve water feed lighter attachment adjustable candlestick and steel ho ik; height, 4½ inches; diameter bottom, 2 inches; diameter reflector, 2⅝ inches; charge, 3 ounces ¼-inch carbide; candle power 18; burns 4 hours, weight 9 ounces.. . . . Per Dozen, $31 00

No. 108—With carbide can Per Dozen $33 00

No. 35—Candlestuck, ¼ inch by 9¾ inches long. . . . . Per Dozen, $4 00

SUPERINTENDENT'S LAMP

No. 100—2⅝-inch reflector, with lighter attachment; folding handles, hook, and pocket carbide can; burns 2½ hours with 2 ounces ¼-inch carbide, height, 3¾ inches, weight, 6 ounces; 18 C.P. Nickel-plated . Per Dozen, $28.00

No. 95—With 3-inch reflector, burns 4½ hours, height 4½ inches, weight 7 ounces..... Per Dozen, $37.00

ACME

No. 50 — Polished Steel Lamp, with bail and hook; 3-inch reflector, burns 5 to 6 hours, height, 5⅜ inches, weight 15¼ ounces Per Dozen, $55 00

LITTLE GIANT LAMP

ALUMINUM

No. 110—Made of ⅛-inch seamless aluminum, in one use only—6-hour capacity, reflector is part of the Lamp, cannot be broken off; equipped with steel bail and hook, and has large screw thread for fastening the top and bottom together; removable spiral valve stem: height 5½ inches, diameter of reflector 3 inches; diameter of bottom 3¼ inches; charge 5 ounces; candle power 18; weight charged, 31 ounces. .....Per Dozen, $110 00

UNCLE SAM LAMP

ALUMINUM

No. 306 Seamless aluminum; steel bail, hook and toggle lock; removable spiral valve stem and umbrella attachment for wet mines; 6-hour burning capacity; height 5½ inches, diameter of bottom 3¼ inches; diameter of reflector 3 inches; charges 6 ounces; candle power 20; weight 31 ounces ... Per Dozen, $74 00

No. 308—8-hour burning capacity; height 6 ounces; diameter of bottom 3¾ inches; diameter of reflector 3 inches; charge 8 ounces; candle power 20, weight 38 ounces. Per Dozen, $98 00

ACETYLENE LANTERN

No. 12 — Brass, nickel-plated, highly polished Lantern, has automatic generator controlling the gas; gives 20 candle power; burns 3 to 4 hours with 3 ounces of carbide; has self-lighter attachment, no matches required Flame can be turned up or down as desired, Bull's-eye lens and reflector; Height with bail down, 9¼ inches; Diameter of base 4½ inches . . . . . .Per Dozen, $97 00

J. R. RICHARDS

INDIANA, PA.

Diamond Drill Contractor

Take no Chances

Test your property before you spend a lot of money in developing it and find that you do not have the quantity and quality that you had expected. I know of a good many instances where the coal looked good on the outcrop and after headings had been driven back into the hills the coal pinched down to a thickness that was too thin to work. In each case a great amount of money had been spent for plant and equipment which had to be dismantled, where in the first place if several drill holes had been drilled it would have saved all this expense.

Diamond Core Drilling.

To do this work I have complete equipment and crews of experienced drillers who have been with me for 20 years. You may well take advantage of their experience.

I have been in the Diamond Drill business for 34 years and have done work for the largest Operators in United States to any of whom you may inquire concerning my work.

For your information I will mention a few of these as follows:

Berwind White Coal Mining Co., Philadelphia, Pa.
Rochester Pittsburg C. & I. Co.....Indiana, Pa.
Cambria Steel Co.....Johnstown, Pa.
Madeira Hill Coal Mining Co.....Philipsburg, Pa.
Beaverdale Coal Co.....Beaverdale, Pa.
Maryland Coal Co.....Cumberland, Md.
Graff Coal Co.....Blairsville, Pa.
Struthers Furnace Co.....Struthers, O.
Oak Ridge C. & C. Co.....Hastings, Pa.
W. P. Rend & Co.....Chicago, Ill.
Glenwood Coal Co.....Philadelphia, Pa.
Cymbria Coal Co.....Philadelphia, Pa.
Mifflin Coal Co.....Pittsburgh, Pa.
Empire Coal Co.....Philadelphia, Pa.
Bertha Coal Co.....Pittsburgh, Pa.
Operators Coal Mining Co.....Johnstown, Pa.
Clark Brothers Coal Co.....Philadelphia, Pa.
King Harlan Co.....Cincinnati, Ohio
Haws Coal Co.....Johnstown, Pa.
Loyal-Hanna Coal & Coke Co.....Philadelphia, Pa.
Graceton Coke Co.....Graceton, Pa.
J. V. Thompson.....Uniontown, Pa.
Clearfield Bituminous Coal Corp.....Indiana, Pa.

I would be pleased to submit prices on your next contract for drilling.

540 Feet of Diamond Core Drillings.

SPRAGUE AND HENWOOD, Inc.

Main Office and Shops
SCRANTON PA.

Diamond Drilling and Wash Boring Contractors
Bore Holes Drilled

Any Depth Any Angle Anywhere

We are the largest diamond drill and wash boring contractors in this country, and have wide experience in examining and proving mineral and coal lands throughout the United States and Canada.

We have been in the diamond drill business for 40 years and have done work for the largest operators in this country and Canada and can furnish references of numerous satisfied customers.

We are equipped to take contracts regardless of size, either inside or outside of mines, and employ only experienced and reliable operators.

If you contemplate any core borings we would be pleased to have you write or wire us and we will have our representative call on you.

Deepest Diamond Drill Hole Ever Drilled in the Anthracite Coal Fields, Completed by Sprague & Henwood, Inc., Sept. 21, 1923.

KANAWHA MANUFACTURING CO.

CHARLESTON, W. VA.

Branch Office: Fayette Bank Bldg., Lexington, Ky.

Manufacturers of

Mine Cars and Tipple Equipment

Products

Mine Cars; Mine Car Irons; Wheels, both plain and roller bearing; Grey Iron Castings.

Mine Cars

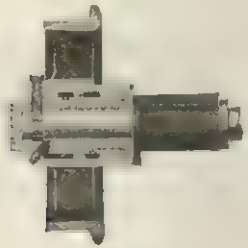
Kanawha Mine Cars are known far and near as cars giving excellent service. No Kanawha car has ever failed in the work for which it was intended. They have strength and long life because they are of well balanced and thorough construction.

Mining requirements differ in accordance with the seam, method of mining, tipple construction, etc. As a result, the term "Kanawha Mine Car" does not mean any particular type or design of car, but literally means, at this writing, more than 600 different designs, each of which was built for a particular combination of operating conditions. Hence the term "Kanawha Mine Car" also includes that important factory ability to meet your requirements so that your expense of operation and repair is reduced to the lowest amount.

Kanawha Wheels and Trucks

The D. P. Type of Kanawha-Hyatt Wheel, here shown, is securely locked on the axle by means of a key block fitting into a groove cut near the end of the axle, this key block being held in position by a screw. The end thrust is taken on the end of the axle by the solid cap of the wheel, thus eliminating excessive friction occasioned by the side sway of the car.

Many operators have expressed a preference for a linch pin wheel, and this demand has brought forward the Solid Cap and Capless Kanawha-Hyatt Wheels. As shown by accompanying illustrations the end thrust is taken on a heavy hardened steel washer running between the wheel hub and journal box.



D. P. Kanawha-Hyatt Wheel

Solid Cap Kanawha-Hyatt Wheel

Capless Kanawha-Hyatt Wheel

Any of these wheels will give the maximum of efficiency and durability, and in their economy in oil and repairs, will soon pay for themselves.

These same type wheels can be furnished with plain bearings as well as with roller bearings.

Let our Engineers help you solve your coal handling problems.

LINCOLN STEEL & FORGE CO.

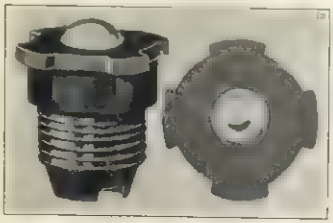
ST. LOUIS, U. S. A.

The Lincoln Greasing System

Products

Lincoln Journal Box Trucks for Mine Cars—Lincoln Roller Bearing Journal Boxes—Complete Pit Cars, either wood, steel or composite bodies—Mine Car Body Irons—Lincoln Greasing System for Mine Cars.

With the Lincoln Greasing System for Mine Cars you can grease your cars in a fraction of the time now required, and with a direct saving in both grease and labor costs. It takes so little effort to grease the Lincoln Way, which is clean, quick and positive, as compared with present slow, dirty and haphazard methods, that your men will take an interest in keeping your cars properly lubricated. And proper lubrication means fewer repair parts and longer life for your car equipment.

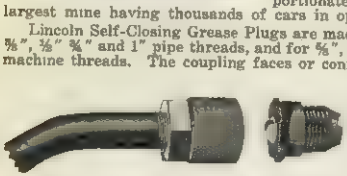


Standard Lincoln Self-Closing Grease Plug

The Lincoln Greasing System for Mine Cars provides: (1)—A Standard self-closing grease plug for all your cars. (2)—A standard coupler nozzle that fits all Lincoln Grease Plugs. (3)—A choice of two types of greasing devices for applying grease to the wheels or bearings. The system is flexible permitting a cost in proportion to the number of cars in operation, and depending on the kind of grease pump desired. With the Lincoln Greasing System a small operation can secure the same efficiency in greasing cars, and at a proportionate cost, as the largest mine having thousands of cars in operation.

Standard Lincoln Coupler Nozzle

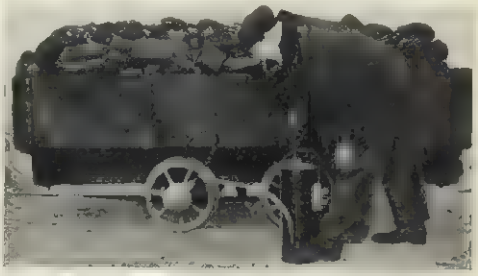
Lincoln Self-Closing Grease Plugs are made for standard ⅜", ½" ¾" and 1" pipe threads, and for ⅜", ¾", ⅛" and 1" machine threads. The coupling faces or connection ends of the grease plugs are all the same size. They replace pipe plugs or machine screws that you must now take out and put back when greasing your trucks—with much loss of time. They also replace many spring oilers that are not made for a grease tight coupler connection.



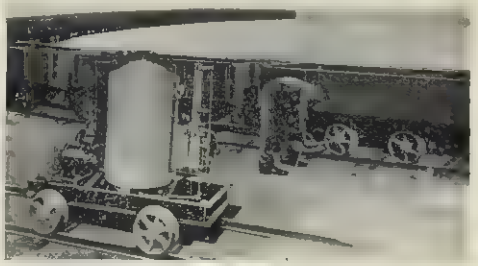
Making Connection With a Grease Plug

The Standard Lincoln Coupler Nozzle (made in one size only) fits all Lincoln Grease Plugs. This is attached to the end of the hose line in place of the ordinary pipe nozzle, and makes a grease tight connection with a one-eighth turn on the grease plug. As connection with the grease plug is made the ball valve of the plug is mechanically depressed, opening plug for the passage of grease. When connection is released the ball again seats closing grease plug against loss of grease or admission of dirt.

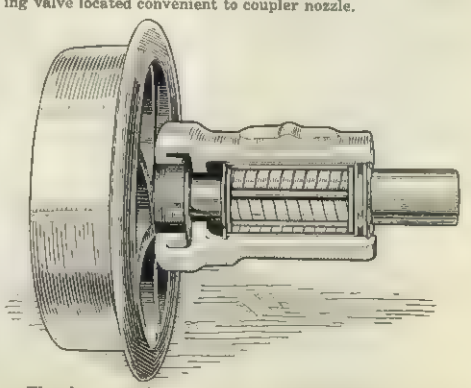
The grease may be forced into the wheel by either of the two Lincoln Greasing Devices (1)—The Lincoln Greasing Cabinet (hand operated). This cabinet holds 25 lbs. of grease—is equipped with pump that delivers ⅛ lb. of grease at each down stroke, and forces the grease into the wheel or bearing under a pressure of 200 lbs. per square inch—all without wasting any grease; (2) The Lincoln Automatic Greasing Machine, operated by compressed air, and with tank holding an entire barrel of grease. A single operation automatically measures a pre-determined amount of grease to go into a wheel or bearing, and then forces the grease into that wheel or bearing under pressure. The charge of grease can be varied from ⅛ to 2 lbs. by means of a simple adjustment. Entire operation is controlled by an operating valve located convenient to coupler nozzle.



Greasing Car (Equipped with Lincoln Self Closing Grease Plugs) with Lincoln Hand Operated Greasing Cabinet



Greasing Trip of Cars (Equipped with Lincoln Self-Closing Grease Plugs) with Lincoln Automatic Greasing Machine



We also manufacture Lincoln Roller Bearing Journal Boxes and Lincoln Journal Box Trucks for Mine Cars.

KANAWHA MANUFACTURING CO.

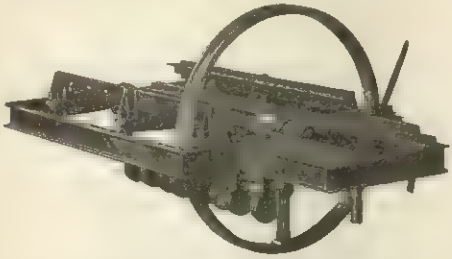
CHARLESTON, W. VA.

Branch Office: Fayette Bank Bldg., Lexington, Ky.

Manufacturers of

Mine Cars and Tipple Equipment

We design and build complete Coal Tipple Equipment from the smallest to the largest. Our products consist of standardized Unit Screens for capacities up to 200 tons per hour; Shaker Screens; Gravity Screens; Feeders; Conveyors (Retarding, Apron, Scraper, Rope and Button and Belt); Picking Tables; Loading Booms; Dumps (Horn, Gravity and Power Driven Rotary); Car Hauls; Monitors; Incline Drums and any other equipment for the preparation and handling of coal.



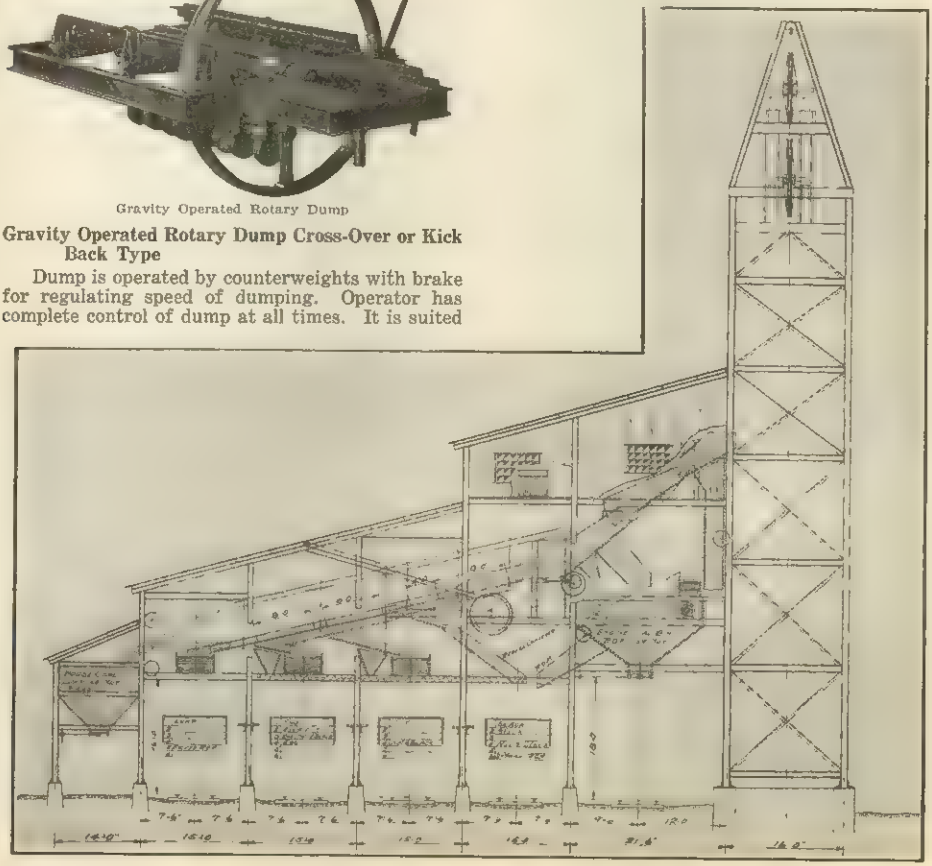
Gravity Operated Rotary Dump

Gravity Operated Rotary Dump Cross-Over or Kick Back Type

Dump is operated by counterweights with brake for regulating speed of dumping. Operator has complete control of dump at all times. It is suited for all types of mine cars, flat bottom, single or double flare. Dump can be installed in any existing tipple; no more clearance being required than with the ordinary cross-over type.

Each equipment has the personal supervision of our experienced engineers from the beginning to the completion of the work. Manufactured in our own shops and erected by our own erection force.

Kanawha Service is Personal Service.



LINK-BELT COMPANY

2045 Hunting Park Ave. PHILADELPHIA
300 W. Pershing Road CHICAGO
P. O. Box 346 INDIANAPOLIS

New York 2078 Woolworth Bldg
Boston 49 Federal St
Pittsburgh 335 Fifth Ave
St. Louis 707 Chestnut Street
Buffalo 15 Ellicott Square
Wilkes-Barre 328 2nd Nat'l Bank Bldg
Huntington, W. Va. Robson-Prichard Bldg
Cleveland 526 Rockefeller Bldg
Detroit 500 Lafayette Ave
Kansas City, Mo. R. 30, 1002 Baltimore Ave
H. W. CALDWELL & SON CO.
Chicago 1700 S. Western Ave New York 2678 Woolworth Bldg Dallas, Texas 51 Main St
LINK-BELT MEESE & GOTTFRIED CO.
San Francisco, 19th and Harrison Sts Los Angeles, 400 E. Third St. Seattle, 820 First Ave. S. Portland, Ore., 67 Front St.
Denver 520 Boston Bldg
Atlanta 24 Marietta St
Louisville, Ky. 721 States Bldg
New Orleans 4 Carondelet Bldg
Birmingham, Ala. 720 Brown-Marx Bldg
Link-Belt Co. Ltd. Toronto and Montreal

Complete Equipment for the Handling, Preparation and Storage of Coal at the Mine

Products

We design and build complete Coal Tipples; Coal Washeries; Rescreening Plants; Retarding Conveyors; Apron Conveyors; Revolving, Shaking, Vibrating and Gravity Screens.

Chutes; Automatic Coal Driers; Railroad Car Dumps; Cross-over, Kick-back and Rotary Dumps; Reciprocating and Rotary Feeders; Car and Portable Loaders; Loading Booms; Picking Tables.

Crawler, Gantry, Bridge and Locomotive Cranes.

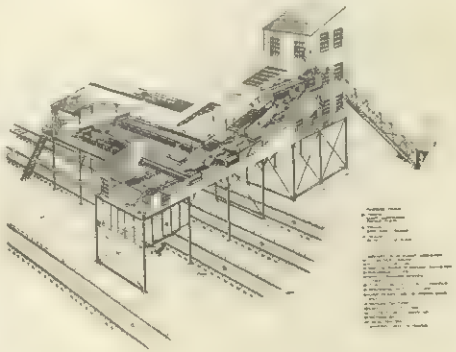
Crushers; Electric Hoists; Skip Hoists; Elevators and Conveyors; Buckets; Flights; Chains for Elevating, Conveying and Power Transmission; Rope Drives; Friction Clutches; Bearings; Collars; Compression Grease Cups; Endless and Tailrope Haulage Systems; Shafting; Sheaves; Take-ups; Transmission Machinery.

Coal and Ashes Handling Systems; Coal Cutting Chains and Bits; Coal Storage Systems.

Catalogs Sent at the Request of Interested Persons

No. 400 General Catalog
No. 333 The Handling and Preparation of Coal at the Mine
No. 472 Wendell Centrifugal Coal Drier
No. 538 Coal Cutting Chain
No. 383-A Economical Handling of Coal and Ashes and Reserve Coal Storage
No. 444 Power Hoe
No. 721 Circular Storage Systems Employing Locomotive Crane
No. 795 Crawler Crane
No. 671 Locomotive Crane
No. 446 Grab Bucket Type A
No. 447 Grab Bucket Type B

For about 30 years the Link-Belt Company has been the leader in the development of efficient, economical equipment for the handling and preparation of coal at the mine. As a result, Link-Belt equipment is today the recognized standard.



X-Ray view of typical Link-Belt Coal Tipple, Himler Coal Co., Warfield, Ky.

Sanford Coal Co.'s Steel Tipple, Paulton, Ill., showing loading booms on two tracks, loading chutes on two tracks, and consumers' chute

Our interest in your installation continues for the duration of its operation. We preserve careful records of all orders, and maintain a corps of competent engineers who keep in touch with every plant we build. Because of this intimate contact we are able to assist you in correctly ordering repair parts, regardless of sizes, and keep you in touch with the latest developments and improvements in the coal mining industry.

The successful operation of our machinery is due to the fact that each equipment is designed by our experienced engineers, manufactured throughout in our own shops under their supervision, and erected by our own erecting corps.

We will gladly have our engineers help you solve your mechanical problems, large or small. In availing yourself of this service you assume no obligation.

Keystone Consolidated Publishing Co., Inc.

800 Penn Avenue

PITTSBURGH, PA.

Printing and Services for Coal Mining Companies

Products

Forms.
Printed Stationery.
Welfare and Promotional Material.
Sales Material.
Advertising Service.
Addressing and Mailing Service.

Forms

Forms of all kinds are in constant use in the management of mining companies, in the purchasing of materials for mines and in all mining operations.

Promptness of delivery of these forms is often vital to those who are keeping the various records of the company. We can guarantee accuracy, promptness of delivery and quality of workmanship. Such forms as Inter-office, Purchasing Department, Shop, Check Weighman's Sheets and all other standard or special forms, can be furnished either loose or padded and punched to fit your requirements.

Printed Stationery

Stationery well printed is a great asset to any business. Though you may purchase yours by the thousands, the man who receives your communication receives but one. His impression is based upon the neatness and design of your stationery. Good paper stock, clean-cut, easily read typography, good color harmony and a brief statement of who you are, where you are and what you have, are essential to modern business methods. We will submit ideas at your request in bill heads, printed letter heads, invoices, order blanks, receipts and other special stationery.

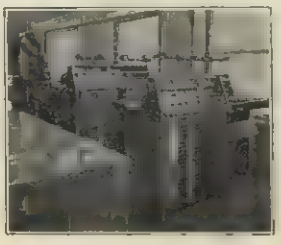
Folding Machines in Bindery

Corner of Job Press Room

Christensen Booklet Stitcher

Corner of Composing Room

Two of Five Typesetting Machines



Imposing and Make-Up Tables

Welfare and Promotional Material

This is one of the most neglected fields of all industries. Building good will with your employees is not the hazardous task it may seem. Your men will be glad to know more of the real conditions of

Display Type Casting Machine

the industry, the company for which they are working and the human side of all with whom they are working. If you wish this work conducted for you, we can with a description of your problems and conditions work out and prepare posters and bulletins, to be posted or mailed to your employees periodically, or, if your welfare work is such as to warrant a monthly booklet conveying messages from the management to the employees, and local news items, we can prepare, edit, print and mail it for you.

Sales Material

Selling your coal depends on many ramifications of bartering. One of the most important of these is the integrity and standing of your firm. Your salesmen preach it, your literature may prove it or disprove it by its appearance and its messages.

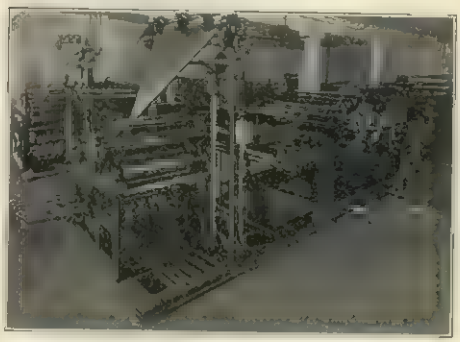
A Corner of Our Mailing Room

Real live sales material showing your analyses, capacity, methods of preparation and properties, and portraying your policies will go a long way toward breaking down the resistance which meets the salesman in his many unproductive calls. Such material can be readily worked up and produced by us for you. If you will send us such material, we will be glad to furnish you with layouts and suggestions for your consideration.

Advertising Service

Many firms who do not have connections with advertising agencies and who do not have a man employed to take care of their sales and advertising literature, are at a loss as to how to properly exploit their coal to the buyer and the prospect.

Our Direct-Advertising Service Department is in position to plan and prepare complete direct campaigns from you to your prospect and customer. The functions of this department are laying-out of mailing pieces, preparation of live sales copy, art



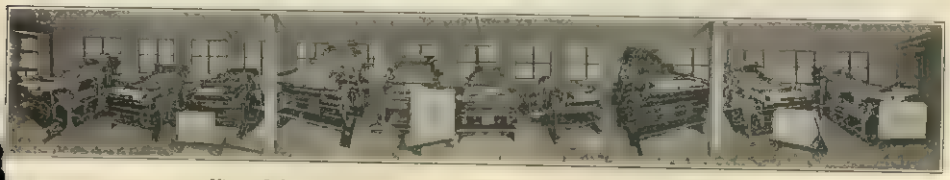
Two Large Rotary Presses for Large Volume Work

work and photo-engravings, the printing of the campaign and the delivery complete to you or to the post office.

In working out these campaigns, our purpose is to produce inquiries for you. In taking over all of these functions, we relieve you of a great many details with which we are thoroughly familiar.

Addressing and Mailing Service

This department rounds out the functions of our printing and direct-advertising departments. Addressing to any list, no matter how small or how large, can be easily and quickly handled in this department. The costs of these mailings are very reasonable. If your mailings are frequent, we can put your list in stencil form and thus further expedite your work.

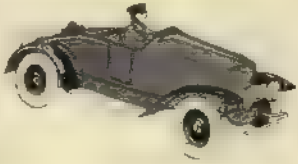


View of Our Cylinder Press Room—Daily Capacity 150,000 Impressions

See, my new Kingsbury Toys Have BALLOON TIRES, too!

Where is the youngster who doesn't want his toy automobile to match the big car the grown-ups drive? Here's the latest thing! BALLOON TIRES as optional equipment on these two new Kingsbury toys (Nos 743 and 744). Be the first to display this new line and you will be handling the popular make of car in your neighborhood

BALLOON TIRES are optional equipment on these two new Kingsbury Numbers only.



KINGSBURY
MANUFACTURING CO.
KEENE N H.

KINGSBURY TOYS

A Complete Line of Mechanical Toys

Office and Salesmen for the United States and Canada Riemann, Seabrey Co., 11-15 Union Square, New York City

The International Speed Truck Is a Friend of the Hardware Man

THIS truck is swift and handy—and sturdy in every part. All excess weight is eliminated. The internal gear final drive, and the special-designed transmission, mounted as a unit with the engine, are noted for economical performance under severe use. Thorough accessibility of engine and all other working parts is a Speed Truck feature.

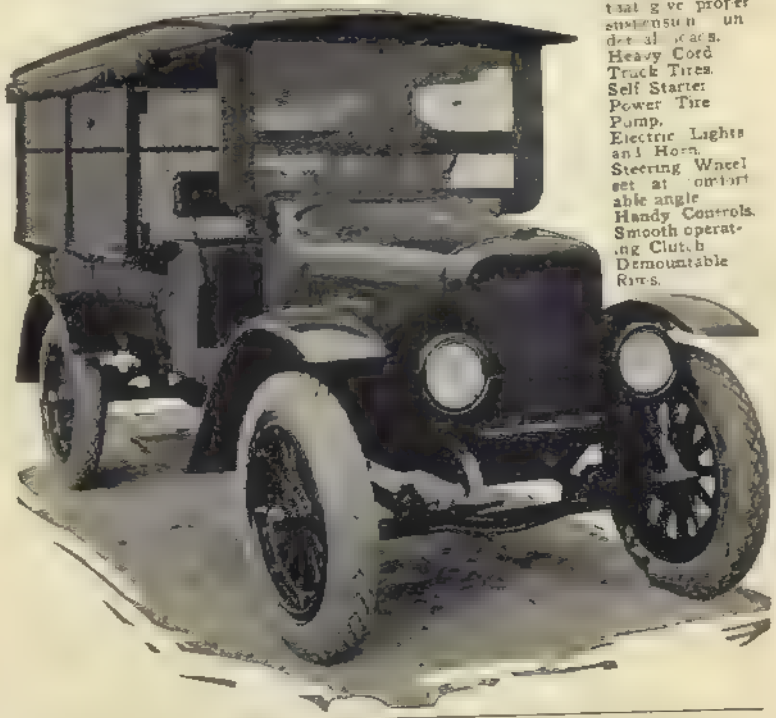
We invite you to inspect an International Speed Truck carefully and to subject it to every test you know of. See if it doesn't exactly meet your needs. A fine-looking truck to advertise your store. (Heavy-duty Internationals are built in 3,000, 4,000, 6,000, and 10,000-lb. maximum capacities.) Write for catalog and for address of nearest showroom.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA (Incorporated)

606 So. Michigan Ave. Chicago, Ill.

The International Speed Truck has:

Auxiliary Springs that give proper suspension under all loads.
Heavy Cord Truck Tires.
Self Starter.
Power Tire Pump.
Electric Lights and Horn.
Steering Wheel set at comfortable angle.
Handy Controls.
Smooth operating Clutch.
Demountable Rims.



Kingston DeLuxe.

The Kingston line for 1923 embraces not only the best, but the handsomest carburetors that the world's largest carburetor factory has been able to produce in the quarter century of its existence. All of these carburetors are of brass construction, all are equipped with Kingston Steering Column Control, and with the new type compact brass strainer. The unvarying success of Kingston carburetors lies in their unquestioned merit. These are the best carburetors that can be produced, anywhere, at any price. There is no better carburetor and we are seeing to it that the general public is informed of the fact. The jobber and dealer who put their faith in the handsome Kingston line will find that they are supported by a vigorous, clean and absolutely truthful advertising campaign. They are attractively boxed, are vigorously advertised, and should prove ready sellers

Maxwell — Weight, each, 5 pounds.
Each $15.00

Chevrolet—Weight, each, 5 lbs.
Each $15.00

Dort—Weight, each, 5 pounds.
Each $15.00

Dodge—Weight, each, 5 pounds.
Each $15 00

Overland Weight, each, 5 pounds.
Each $15.00

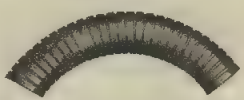
FLEXIBLE METAL TUBING

Flexible metal tubing, to be used for conveying hot air from exhaust pipe to carburetor. Can be used for connection to exhaust horn; also serviceable for enclosing and protecting electric light and ignition wires and cables.

⅜-inch flexible metal, inside diameter; cut in any lengths. Per foot.....$0.32

AUTO HEATER TUBING

Rex-Tube.



Rex-Tube flexible steel heater tubing is especially designed to convey hot air to the register. It is strongly constructed of one continuous strip of heavy electro-galvanized, rust-resisting steel, so bent and formed as to make a semi-interlocked joint.

Through this peculiar construction it retains its flexibility without loss of strength, and can be readily bent to very small circle diameters.

The joints are semi-interlocked so that the tubing is tight without the use of any special packing and cannot be unwound.

Where a specially tight tubing is required, we recommend that asbestos packed tubing be used.

Will fit all standard couplings.

Shipped in machine- run lengths, natural condition, which is neither compressed nor extended.

1 5-16 inch—O. D. for the Perfection & Victor Heaters. Per foot $0.30

1 7-16 inch—O. D. for the Bovey Temme & Utility Heaters. Per foot.. ..... .36

1 9-16 inch—O. D. for the Channson Heater. Per foot ..... .38

PLIERS

HEAVY LINEMEN'S SIDE CUTTING

No. 1950—Drop forged steel, polished head, no pinch scientific shape dentyne knurled gun metal handles.

Length, inches	6	8
Weight per dozen, lbs.	5	12
Per dozen	$21.00	24.00

One in a box, one half dozen in a carton

ELECTRICIAN SIDE CUTTING

No. 50—Spring tempered forged steel, polished head, keen cutting blades, no pinch gun metal finish shaped handles.

Length, inches	6	7	8
Weight per dozen, lbs.	5	6½	10
Per dozen	$15.00	18.00	21.00

One in a box, one half dozen in a carton.

PLIER ASSORTMENTS

PEXTO SPECIAL

On Display Card.

Per assortment

No. 51 Pexto Assortment—Contains 12 Pexto Pliers, one of each plier is mounted on a 14x11 in. heavy cardboard display card printed in colors orange and blue; pliers mounted on card with metal clips, display card has easel back which makes it adaptable for window or counter display, weight per assortment 7 lbs. $12 00

Contents of Assortment

Two No. 240—7 in. Side cutting pliers.
Two No. 270—5 in. Diagonal cutting pliers.
Two No 70 -7 in. Combined side cutting and button pliers.
Two No. 93—5 in. Millliners pliers.
Two No. W0—6 in. Slip joint pliers
Two No. 0 -6 in. Slip joint pliers
One assortment in a carton.

PLIER ASSORTMENTS

Highest Quality

Per assortment

No. 51—Assortment, contains 24 Kraeuter Pliers mounted on green weathered oak wax finish display board 33x17x3 in., weight per assortment 32 lbs. $32.50

Contents of Assortment

One No. 1781—7 in. flat nose plier	$1 75
One No. 2601—6 in. diagonal cutting plier	1 65
One No 1671 6 in. needle nose plier	1.40
One No. 1661 6 in. needle nose cutting plier	1 75
One No. 1821 5½ in. Universal cutting plier	1 35
One No. 1831—6½ in. linemen's cutting plier	1 25
One No. 1831—7 in. linemen's cutting plier	1 40
One No. 1621—6 in. fine needle nose plier	1.50
One No. 1631 —5½ in. curved needle nose plier	1.75
One No 1863 6 in "Grip All" combination plier	1 10
One No 1913 7 in bent thin nose combination plier	1 40
One No 1972 5½ in. "Gripkut" cutting comb. pliers	1.35
One No. 1933—5½ in. thin nose comb. gripping pliers	1.10
One No. 1913—5½ in. bent thin nose comb. pliers	1 10
One No. 305—5½ in. "Victor" combination plier	1.10
One No. 356—5½ in. combination "Griptite" pliers	.80
One No 356 -6 in combination "Griptite" pliers	1 00
One No. 1973 7 in Gripkut" cutting comb pliers	1.60
One No. 1923 8 in bent nose combination pliers	1 50
One No. 356 8 in combination "Griptite" pliers	1 25
One No. 356—10 in combination "Griptite pliers	1.50
One No. 1863—9 in "Grip All" combination pliers	1.40
One No. 305 -7 in "Victor" combination pliers	1 25
One No. 1903—7 in. thin nose combination pliers	1.25

One assortment in a box.

PLIERS

HEAVY LINEMEN'S SIDE CUTTING

No. 1050—Drop forged steel, polished head, no pinch scientific shape dentyne knurled gun metal handles.

Length, inches	6	8
Weight per dozen, lbs.	5	12
Per dozen	$21.00	24.00

One in a box; one half dozen in a carton.

ELECTRICIAN SIDE CUTTING

No. 50—Spring tempered forged steel, polished head, keen cutting blades, no pinch gun metal finish shaped handles.

Length, inches	6	7	8
Weight per dozen, lbs.	5	6½	10
Per dozen	$15.00	18.00	21.00

One in a box; one half dozen in a carton.

PLIER ASSORTMENTS

PEXTO SPECIAL

On Display Card.

Per assortment

No. 51 Pexto Assortment—Contains 12 Pexto Pliers, one of each plier is mounted on a 14x11 in. heavy cardboard display card printed in colors orange and blue; pliers mounted on card with metal clips, display card has easel back which makes it adaptable for window or counter display, weight per assortment 7 lbs. $12.00

Contents of Assortment

Two No. 240 7 in. Side cutting pliers.
Two No. 270 5 in. Diagonal cutting pliers.
Two No 70—7 in. Combined side cutting and button pliers.
Two No. 99—5 in. Milliners pliers.
Two No. W0—6 in Slip joint pliers
Two No. 0—6 in. Slip joint pliers.

One assortment in a carton.

PLIER ASSORTMENTS

Highest Quality

Per assortment

No. 51—Assortment, contains 24 Kraeuter Pliers mounted on green weathered oak wax finish display board 33x17x3 in., weight per assortment 32 lbs $32.50

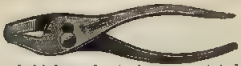
Contents of Assortment

One No 1781—7 in flat nose plier $1.75
One No 2601 6 in. diagonal cutting plier 1.65
One No. 1671—6 in. needle nose plier 1 40
One No. 1661—6 in. needle nose cutting plier 1 75
One No. 1821—5½ in. Universal cutting plier 1.35
One No. 1831—6½ in. linemen's cutting plier 1.25
One No. 1831—7 in. linemen's cutting plier 1.40
One No. 1621 6 in. fine needle nose plier 1.50
One No 1631—5½ in. curved needle nose plier 1.75
One No. 1863 -6 in. "Grip All" combination plier 1 10
One No. 1913 7 in bent thin nose combination plier 1.40
One No 1973—5½ in. "Gripkut" cutting comb. pliers .. 1.35
One No 1933 5½ in. thin nose comb. gripping pliers .. 1.10
One No. 1913 5½ in. bent thin nose comb. pliers 1.10
One No 305 5½ in. "Victor" combination plier 1 10
One No 356 5½ in. combination "Griptite" pliers ..... .80
One No. 356 6 in. combination "Griptite" pliers 1.00
One No. 1973—7 in. "Gripkut" cutting comb. pliers..... 1.60
One No. 1923—8 in. bent nose combination pliers 1.50
One No. 356—8 in. combination "Griptite" pliers 1 25
One No. 356—10 in. combination "Griptite pliers 1.50
One No. 1863 -9 in. "Grip All" combination pliers 1.40
One No. 305—7 in. "Victor" combination pliers 1.25
One No. 1903—7 in. thin nose combination pliers 1.25

One assortment in a box.

PLIERS

CRESCENT UNIVERSAL SLIP JOINT



Drop forged, high grade steel, nickel plated properly hardened and accurately machined.

The curved lower jaw will force any object against the straight upper jaw for its entire length or breadth. The straight jaw has a groove for holding wire and rods parallel with the jaw Also has a convenient wire cutter and screw driver.

Per dozen

No. D27—7 in. long, capacity 1 in., weight per dozen 7 lbs. $9.00

One in a box.

"SR. BENT NOSE" SLIP JOINT

Forged steel, nickel plated, Button's cutter, "V" holding nose, milled jaws, burner grip, knurled screw driver handles.

Per dozen

No. 926—10 in. long, weight per dozen 14 lbs. $21.00

One half dozen in a box.

THIN STRAIGHT NOSE

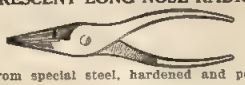
Drop forged, polished nickel finish, checkerdot handles, hardened bolt and nut.

A thin nose plier for narrow places and difficult work.

Nos.	L25	L26
Length, inches	5	6
Capacity, inches	¾	1
Weight per dozen, lbs.	2½	4
Per dozen	$6.00	7.20

One in a box.

CRESCENT LONG NOSE RADIO



Forged from special steel, hardened and polished, with wire cutter

For radio work, wire bending, loop forming, reaching cotter pins in out of the way places, adjustment work on fine machinery, etc.

Per dozen

No. M16—6 in. long, capacity ¾ in., weight per dozen 4 lbs $12.00

One in a box.

LONG CHAIN NOSE SIDE CUTTING

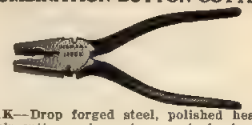
No. 654—Forged steel, polished head, knurled gun metal handles.

Length, inches	6	7
Length nose, inches	3	3¼
Weight per dozen, lbs.	3	4
Per dozen	$15.00	18.00

One in a box, one half dozen in a carton.

PLIERS

COMBINATION BUTTON CUTTER



No. 1001K—Drop forged steel, polished head, flat nose, three Button's cutters, pipe grip, no pinch, dentyne knurled shaped handles.

Length, inches	6	8	10
Weight per dozen, lbs.	6	10	15
Per dozen	$9.00	10.80	12.00

One in a box; one half dozen in a carton.

DIAGONAL CUTTING

No. 942—Drop forged steel, polished head, keen cutting knives tested for silk insulation, no pinch, knurled gun metal handles.

Length, inches	4	5	6
Weight per dozen, lbs.	2	3	4
Per dozen	$15.00	18.00	21.00

One in a box, one half dozen in a carton.

DIAGONAL CUTTING

Drop forged steel, full polished, powerful leverage, rope knurled shaped handles

Per dozen

No. 542—7 in long, weight per dozen 6½ lbs. $15.00

One in a box, one half dozen in a carton

KLEIN SIDE CUTTING

No. 201 Hammer forged high grade crucible tool steel, spring tempered, black handles, polished head.

Length, in	6	7	8
Weight per dozen, lbs.	5	7½	12
Per pair	$2.80	3.35	3.75

For use on bare and insulated wire. Its handles are shaped to the curvature of the hand, a much desired feature. Powerful leverage and keen reinforced cutting knives make this plier adaptable for heavy cutting in telephone and telegraph work.

Full clearance back of the knife permits use in insulated wire

One half dozen in a box.

THE LEETONIA TOOL COMPANY

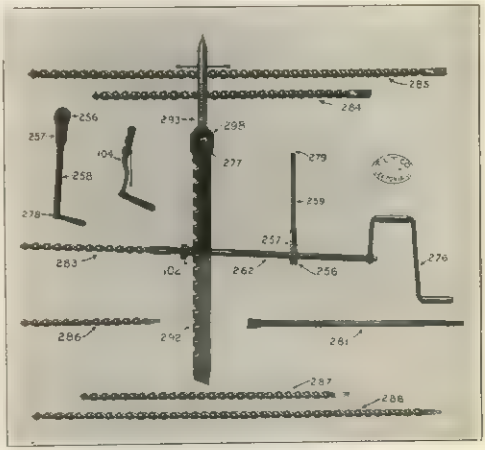
LEETONIA, OHIO, U. S. A.

Products

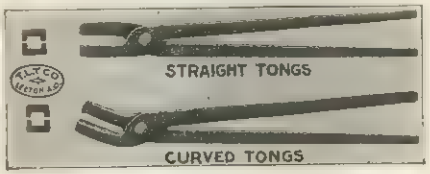
Coal and Ratchet Rock Drills; Sure Clip Steel Mine Ties; Breast Augers; Coal Picks; Puncher Picks; Cleaner Picks; Wedges; Steel and Copper Tipped Tamping Tools; Steel and Copper Needles; Bars—Slate, Pinch, Jimmy and Spike; Cutter Bits; Bit Steel; Socket Wrenches; Adzes; Hatchets; Augers for Electric Drills; Bit Tongs; Cold Chisels; Wrecking Bars; Calking Tools; Track Gauges; Tie Holders; Bull Point Bars; Boiler Picks; Fire Tools.

We make a complete line of Hand Operated Coal and Rock Drills, Mine Trackman's and other tools for use in and around mines. For years we have carefully devoted our Thought and Experience in improving and expanding our line of products until today we manufacture a larger variety of Superior Quality Drills and Tools than any other manufacturer in America.

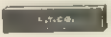
Leetonia products are absolutely the very best for the money and are guaranteed to give satisfaction. Our Catalog should be on your desk for ready reference. Write today for your copy.



Easiest to Set and the Most Efficient Ratchet Rock Drill Made
One of Over 20 Styles of Drills



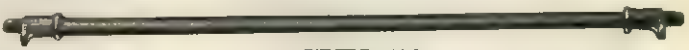
Bit Tongs—Easy to Handle, Low First Cost



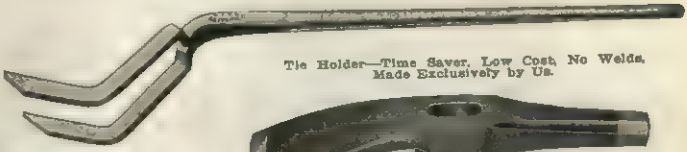
Bit Steel—½"x¾" and ⅝"x1" Proper Carbon Manganese etc., to Stand Severe Service, Cut Straight or 45 degree angle.

Chisel Point Bit—Excellent Steel, Proper Angle

Pick Point Bit—Uses Little Current, Stays Sharp.



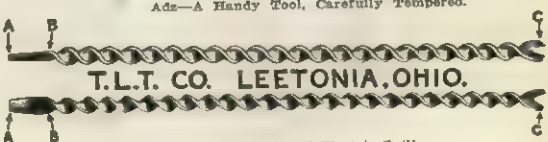
Mine Track Gauges—Straight and Forked Ends, Light, Strong, Efficient, Proper Size for Mine Use.



Tie Holder—Time Saver, Low Cost, No Welds, Made Exclusively by Us.

Adz—A Handy Tool, Carefully Tempered.

Roadmen's Hatchet—Long Pole, Proper Shape, Will Stand Hard Usage



Augers for Any Make of Electric Drills

All the Leading Mining Schools of North America Use and Exhibit Leetonia Drills and Tools.

Prices and information gladly furnished by your nearest jobber or direct from our main office at Leetonia, Ohio, U. S. A.

THE SALEM TOOL COMPANY

SALEM, OHIO
U. S. A.

Manufacturers of

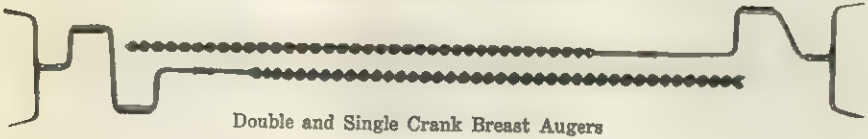
"SALEM MINING TOOLS"

Products

A Complete Line of Miner's Tools; Post and Grip Drills; Breast Augers; Coal Picks; Copper and Steel Tamping Tools; Claw, Crow and Slate Bars.

We also sell as Jobbers: Shovels, Handles, Caps, Carbide Lamps, Carbide, Fuse, Blasting Paper, Squibs, Axes, Leather, Files and Track Tools.

Coal Augers for Electric Power Drills.

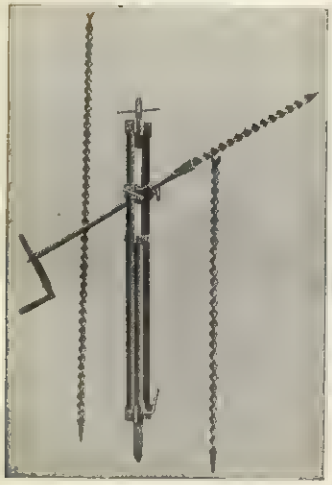


Double and Single Crank Breast Augers

Copper Tamping Tools

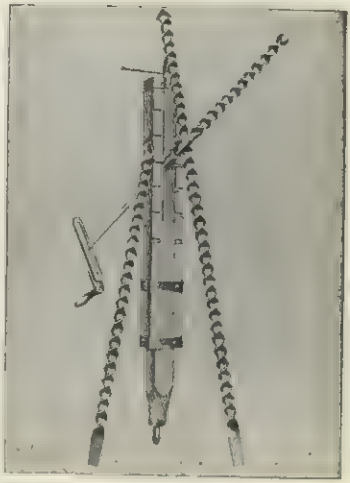
B Flat Coal Pick

Clearfield Coal Pick



Salem Light Steel Adjustable Post Drill
(End Gear)

Copper Tamper
Copper Needle
Copper Tamper and Scraper



Salem Improved Grim Wood Post Drill
(End Gear)

LIQUID RADIATOR CEMENT

DUTCH BRAND POR-A-SEAL

Stops Leaks in Radiators

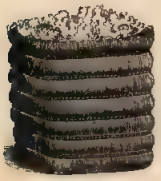
A scientific product for sealing leaks in radiators, water jackets or cracked cylinders without the aid of metal solder or heat. Contains no injurious substances and will not hurt the cooling system nor injure the radiator or pump. It also prevents accumulation of scale and rust.

Per dozen cans

Por-a-Seal—In 10 oz. cans $9.00

One dozen cans in a box, complete with display stand

COTTON WASTE



Fine long thread machine cop

White

Per pound

No. 1- 50—In 50 lb. bales. $ ...
No. 1-100—In 100 lb. bales. ...
No. 1A —Auto, in 1 lb. cartons .. . . ..

Colored

Per pound

No. 1C- 50—In 50 lb. bales..... $ -
No. 1C-100 -In 100 lb. bales . . . . .
No. 2C- 50—In 50 lb. bales .. ..
No. 2C-100—In 100 lb. bales. .. ... .

*FIRE EXTINGUISHERS

ALERT

Soda-acid type, for factories, homes, hotels, etc

Approved and labeled by the Underwriters' Laboratories, Inc.

Cold rolled Lake Superior copper, with all seams tinned, soldered and riveted, dome attached to shell by a lock joint reinforced with a heavy solder ring which makes the seam as solid as the metal itself, cast brass bottle holder heavily tinned

Hose is attached by a swivel joint which is impossible to detach except with wrench

The bottom is locked by means of a double bead and a heavy solder ring and it is impossible to force it out under any pressure.

It is remarkably effective on fires in free burning materials such as wood, textiles, rubbish, etc.

Each

Alert—Polished copper, total capacity 3 gals., liquid capacity 2½ gals., weight each 16¼ lbs . . $15 00

Extra Recharges—For above .. . .

*Not carried in stock, will ship from factory.

OIL AND HI-PRESSURE GREASE GUNS

Tested for 2,000 pounds' pressure. Where used with Hi-Pressure lubricating system the spout is replaced with a flexible hose.

Each

No. C501¼ -Complete with spout $2.00

METAL HOSE

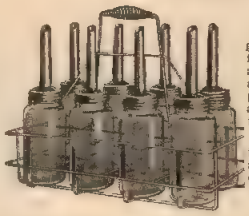
For use in connection with the above grease gun for Hi-Pressure lubricating system

Each

No. 14—Flexible, 14 in. long..... $1 00

MOTOR OIL AND ALCOHOL CONVEYORS

LEWIS IMPROVED



Standard transparent glass jars marked "one full liquid quart" Tops are one-piece all metal and equipped with improved air vents which automatically regulate flow of oil.

Carriers are arranged in light compartments and are electrically welded and non rustable.

Per set

No. 8—8 jars complete with tops and carrier, weight each 15½ lbs. $6.50

Per dozen

No. MT—Metal tops, with cork gasket and dust caps... $4.80

Each

No. WC—Wire carriers only $2.50

LUBRICATING OILS

For steam engines, machinery and all kinds of lubricating

	Per Gal.	Full Bbls.	½ Bbls.	In Jacket Cans
H H. H. engine.....$....	....	....	....	....
Chilhowie engine .. .	. . .	....	....	. . .
H. H. H. machine . . .	. .			. .
Golden machine			..	. .
Castor machine (heavy)		..	...	.
H. H. H. cylinder .. .		.	..	..
Chilhowie cylinder ..		.	.	.
H. H H. valve		.	....	.
Black oil		.	....	
Floor—Dust killer		....	.....	.

Price—Barrels and half barrels include package Less quantity, there will be an extra charge for jacket cans.

LIQUID RADIATOR CEMENT

DUTCH BRAND POR-A-SEAL

Stops Leaks in Radiators

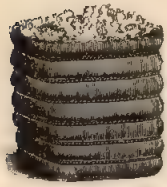
A scientific product for sealing leaks in radiators, water jackets or cracked cylinders without the aid of metal solder or heat. Contains no injurious substances and will not hurt the cooling system nor injure the radiator or pump. It also prevents accumulation of scale and rust.

Per dozen cans

Por-a-Seal— In 10 oz. cans $9.00

One dozen cans in a box, complete with display stand.

COTTON WASTE



Fine long thread machine cop

White

Per pound

No. 1- 50—In 50 lb. bales..$. .

No. 1-100—In 100 lb bales. ....

No. 1A —Auto, in 1 lb. cartons ....

Colored

Per pound

No. 1C- 50—In 50 lb. bales.....$....

No. 1C-100—In 100 lb. bales.... . . ..

No. 2C- 50 -In 50 lb. bales.. ... ...

No. 2C-100—In 100 lb. bales. . ...

*FIRE EXTINGUISHERS

ALERT

Soda-acid type, for factories, homes, hotels, etc.

Approved and labeled by the Underwriters' Laboratories, Inc.

Cold rolled Lake Superior copper, with all seams tinned, soldered and riveted; dome attached to shell by a lock joint reinforced with a heavy solder ring which makes the seam as solid as the metal itself, cast brass bottle holder heavily tinned.

Hose is attached by a swivel joint which is impossible to detach except with wrench

The bottom is locked by means of a double bead and a heavy solder ring and it is impossible to force it out under any pressure

It is remarkably effective on fires in free burning materials such as wood, textiles, rubbish, etc.

Each

Alert—Polished copper, total capacity 3 gals., liquid capacity 2 ½ gals., weight each 16¼ lbs. $15.00

Extra Recharges—For above ... .

*Not carried in stock, will ship from factory.

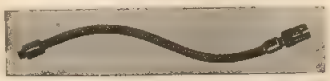
OIL AND HI-PRESSURE GREASE GUNS

Tested for 2,000 pounds' pressure. Where used with Hi-Pressure lubricating system the spout is replaced with a flexible hose.

Each

No. C501½—Complete with spout $2.00

METAL HOSE



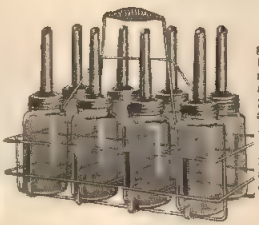
For use in connection with the above grease gun for Hi-Pressure lubricating system.

Each

No. 14—Flexible, 14 in. long.. .....$1 00

MOTOR OIL AND ALCOHOL CONVEYORS

LEWIS IMPROVED



Standard transparent glass jars marked "one full liquid quart." Tops are one-piece all metal and equipped with improved air vents which automatically regulate flow of oil.

Carriers are arranged in light compartments and are electrically welded and non-rustable.

Per set

No. 8—8 jars complete with tops and carrier, weight each 15½ lbs. $6.50

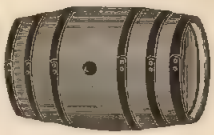
Per dozen

No. MT Metal tops, with cork gasket and dust caps...$4.80

Each

No. WC—Wire carriers only $2 50

LUBRICATING OILS



For steam engines, machinery and all kinds of lubricating

	Per Gal	Full Bbls.	½ Bbls.	In Jacket Cans
H. H. H. engine.... ..$....	....	....	....	. .
Chilhowie engine	. .	....	....	....
H. H. H. machine	. .	. .	. .	. .
Golden machine	. .	...	..	..
Castor machine (heavy)	..	.	.	....
H H. H. cylinder		....	.	. .
Chilhowie cylinder	..	....		
H. H. H. valve	.	...	.	. .
Black oil	. .	. .	.	.
Floor—Dust killer	....	....		. .

Price—Barrels and half barrels include package Less quantity, there will be an extra charge for jacket cans.

Remarkable Bargains in High Grade Library Lamps at Factory Prices

Well made and elegantly finished. Especially low priced. Complete with six feet Silk Cord and Plug. Specify color, shade and finish stand when ordering. Ideal Wedding or Anniversary Gifts.

16-inch Shade in marble overlay, eight upper and eight lower panels. Two-tone art glass. Height 21 inches. Finish Polychrome or Gold and Green stand, which specify when ordering.
No. 4N6923 Specify finish, each **$22.70**

16-inch Shade in metal overlay, eight panels in amber, copper or sunburst glass. Finish of stand Gold and Green or Antique Gold, which specify when ordering.
No. 4N6920 Specify finish each **$25.35**

LIGHTED BASE TABLE LAMP

One light in shade, one light in base. Height 21 inches. Diameter of shade 16 inches. Decorative art glass. Stand and stay finished in polychrome.
No. 4N6930 Each **$24.80**

16-inch Shade in metal overlay. Eight upper and eight lower panels. Two-tone art glass. Height 24 inches. Finish of stand Antique Gold or Gold and Green, which specify when ordering.
No. 4N6940 Specify finish each **$29.35**

16-inch Shade in metal overlay. Eight upper and eight lower panels. Two-tone art glass. Height, 24 inches. Finish of stand Antique Gold or Gold and Green, which specify when ordering.
No. 4N6982 Specify finish each **$29.35**

LIGHTED BASE TABLE LAMP

Two lights in shade, one light in base. 18-inch Shade in metal overlay. Three-tone art glass. Height, 24 inches. Stand finished in polychrome.
No. 4N6953 Each **$36.70**

LIGHTED BASE TABLE LAMP

Two lights in shade, one light in base. 18½-inch shade in metal overlay, eight upper and eight lower panels. Two-tone art glass. Height, 24 inches. Stand richly finished in Polychrome
No. 4N6942½ Each **$48.70**

LIGHTED BASE TABLE LAMP

Two lights in shade, one light in base. 20-inch Shade in Overlay Renaissance Period design. Three-tone art glass. Height, 28 inches. Stand richly finished in Polychrome or Jap Bronze which specify when ordering.
No. 4N6943 Specify finish, each **$43.35**

LIGHTED BASE TABLE LAMP

Two lights in shade, one light in base. 20-inch Shade in metal overlay. Three-tone art glass panels. Height, 28 inches. Stand richly finished in polychrome. A very high grade number.
No. 4N6946/48 Each **$64.80**

Artistic Hand Decorated High Grade Parchment Shade Lamps and Side Lights

PARCHMENT, AS USED IN THE MANUFACTURE OF LAMP SHADES, IS A SPECIALLY PREPARED PARCHMENTIZED PAPER POSSESSING A HIGH DEGREE OF TRANSLUCENCY AND DURABILITY, THROUGH OUR SECRET PROCESS, BEAUTIFUL AND ARTISTIC MOTTLED AND CLOUDED EFFECTS ARE OBTAINED THROUGH WHICH A SOFT, RADIANT LIGHT IS DIFFUSED. COME COMPLETE WITH CORD AND PLUG.

PRACTICAL GIFTS THAT BRING HAPPINESS

LARGE TABLE LAMP

This is a very popular number. The decoration is very attractive. The entire work is executed in a most artistic manner. Wood base decorated in same design and colors as shade. Two-light pull chain cluster, complete with silk cord and plug. Decorative shade 20 inches. Complete height, 33 inches. Bird and rose design. Violet and gold coloring. Can also be finished in antique copper, silver or gold polychrome. **(State finish wanted when ordering).** Gold braid on top, bottom and side.

No. 4P106 18 Complete Lamp, each **$34.53**

LARGE TABLE LAMP

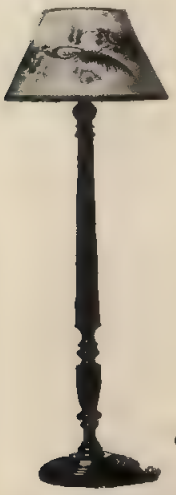
Not only is this design very pretty and impressive in appearance, but the workmanship and finish is masterly executed, giving a last word of superiority which only skilled artisans can accomplish. Popular Blended decoration, octagon shape. Rich amber coloring. Can also be furnished in antique copper, silver and gold polychrome. Wood base, decorated in same colors as shade. Two-light pull chain cluster, complete with silk cord and gold lights and bright. Diameter of shade, 18 inches. Complete height, 33 inches. **State finish wanted when ordering).**

No. 4P136/20 Complete Lamp, each **$24.58**

LARGE TABLE LAMP

This high grade number is most available in appearance and will add utmost grace and charm to any setting. Wood base decorated in same design and colors as shade. Two-light, pull chain cluster complete with silk cord and plug. Diameter of shade 20 inches. Complete height, 33 inches. Decoration, dark yellow roses, red and green foliage on light ivory. Can also be finished in antique copper silver or gold polychrome. **(State finish wanted when ordering).** Gold braid on top, center and bottom.

No. 4P142 17 Complete Lamp with. **$26.10**



REGULATION SIZE FLOOR LAMP

Mahogany finished stand, highly polished, in a very attractive design. Two-light pull chain cluster, height 57 feet. 24-inch parchment shade in a beautiful pheasant decoration, gold and purple being the predominating colors. Gold braid, top, bottom and side. Complete with silk cord and plug.

No. 4P415 12 Complete Lamp, each **$25.60**

GOOSE NECK READING LAMP
Height 60 Inches

This practical reading lamp is of same construction and finish as Junior Floor Lamp shown below at right. Italian old chrome stand and finish in antique gold, silver or copper. Has a magnificent two-tone effect, artistically etched with hand gold lacquer effects. One-light pull chain, complete with silk cord and plug. 12-inch parchment shade in a beautiful conventional design. Proper colored shade furnished with finish stand selected. Gold braid on top, bottom and side. **State finish stand wanted when ordering.**

No. 4P416, 22 Complete Lamp, each **$37.25**

JUNIOR FLOOR LAMP
Height 58 inches

This is a touch of exceptional refinement and beauty. Italian gray chrome stand finished in antique gold, silver or copper. Stand has a convenient book rest effect artistically etched with hand gold lacquer effects. Two-light pull chain cluster complete with silk cord and plug. 18-inch parchment shade in a beautiful conventional design. Proper colored shade furnished with finish stand selected. Gold braid on top, bottom and side. **State finish stand wanted when ordering.**

No. 4P412/22 Complete Lamp, each **$38.30**

HAND PAINTED PARCHMENT SHIELD OR SIDE LIGHT

A very attractive shield for your boudoir lamp. Your present shade can be removed and this shield or other lamp shade is desirable changed very readily to the current style. A rich and attractive conventional rose design, with gold braided border 3 inches, for single light and is equipped with fittings. Also furnished in any other design wanted.

No. 4PC Each **$1.85**

HAND PAINTED PARCHMENT SHIELD OR SIDE LIGHT

A very attractive design that has been exceedingly popular. Conventionalized butterfly decorations in autumn colors, amber and brown predominating. Gold braided border 3 inches. Any colors made up and equipped with fittings. Also furnished in any other design wanted.

No. 4PE Each **$2.18**

HAND PAINTED PARCHMENT SHIELD OR SIDE LIGHT

The second model is this style with scalloped top and the color combines the parchment to a wonderful texture. Very rich, durable and lasting. Decorated in an exclusive conventional design which is very attractive. Can finish same to order in any decoration wanted. Shield measures 7 inches for single light and is equipped with fittings. Gold braided borders.

No. 4PF Each **$2.28**

HAND PAINTED PARCHMENT SHIELD OR SIDE LIGHT

This elegant design owing to its shape appears like a complete globe in parchment. Very suggestive for shower or wall lights. Design as shown is an attractive conventional rose pattern, hand executed and decorated. Any pattern wanted. Just state so in order. Complete with fittings and has gold braided borders.

No. 4PD Each **$2.78**

GUARANTEE

Should the inner combustion tube of the Lorain High Speed Oil Burner burn out within 10 years from date of purchase, replacement will be made entirely free of charge.

Mothers Know *Good* Cook Stoves

MOTHERS know good cook stoves —and praise them. Why shouldn't they? They use the stove day in and day out. They shoulder the entire burden of preparing delicious, nourishing meals for the family. They usually assume the blame for every failure.

They are good "salesmen," too—these mothers—quick to tell friends, neighbors and relations when something is discovered that saves time, labor, money—or that does the work *better*.

For nearly a half-century American mothers have used and praised the cooking appliances made by the several divisions of American Stove Company. The "good word" has been "passed"—in the home, at the church, club and lodge; in fact, wherever women meet—that stoves made by American Stove Company are *good* stoves.

And all this was true long before national advertising was adopted by American Stove Company to attract the attention and gain the interest of millions of buyers old and new.

Five (short) years of national advertising have made Lorain Oven Heat Regulated Gas Ranges supreme wherever gas is used for cooking. And soon, in every district where gas is not available, Lorain High Speed Oil Burner Cook Stoves will be equally pre-eminent.

Stop and think of the effect of a national yearly distribution of a hundred million advertisements. Stop and consider the reputation of the maker. Stop and wonder at the number of actual sales made by tens of thousands of satisfied users. Go out and learn how supremely good the 1924 Lorain Burner really is. And, make your own estimate of the profit you can earn by selling Oil Cook Stoves equipped with the Lorain High Speed Burner.

AMERICAN STOVE COMPANY, St. Louis, Mo.

Many famous makes of Oil Cook Stoves are equipped with Lorain High Speed Oil Burners including:

Direct Action—National Stove Company Div., Lorain, O.

New Process—New Process Stove Co. Div., Cleveland, O.

Quick Meal—Quick Meal Stove Co. Div., St. Louis, Mo.

Clark Jewel—George M. Clark & Co. Div., Chicago Ill.

Dangler—Dangler Stove Company Div., Cleveland, Ohio.

LORAIN HIGH SPEED OIL BURNER

Say you saw it in GOOD HARDWARE

LOUISVILLE FROG & SWITCH CO.

INCORPORATED

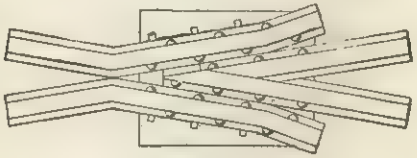
30th St. North of High Ave.

LOUISVILLE, KY.

Manufacturers of

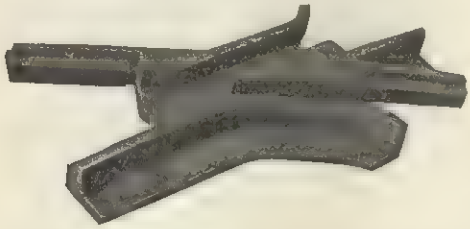
Frogs, Switches, Crossings, Crossovers, Switch Stands, Room Turnouts, Special Track Work for Steam and Electric Roads, Mines and Industrial Works

Riveted plate frog for mines, using light rail from 12 pounds to 45 pounds per yard.

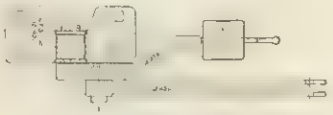


Light Rail Riveted Frog.

This construction furnishes a very substantial frog.



We can furnish a semi-steel frog cast in one piece, having no bolts, rivets or plates, for any track radius and any rail section. The frog is designed to withstand very heavy service.

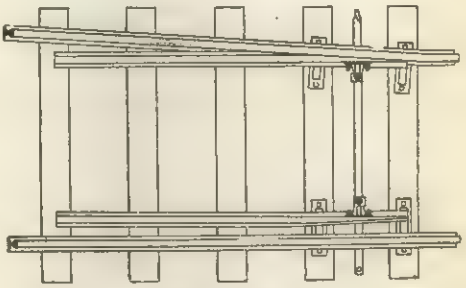


Ground Throw Switch Stands for Mines and Mills

A strong, light weight switch stand used on switches of 12 to 45 pounds rail section.

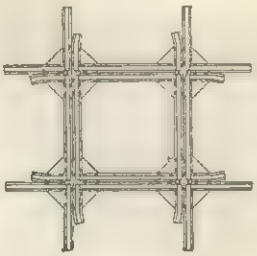
We also make a switch stand for heavier rails.

We make a specialty of manganese work, also furnish Switch Parts, Slide Plates, Headrods, Lugs, Rail Braces, Frog Plates, Rail Anchors, Guard Rail Clamps, "Anchor" Car Replacers, etc.



Light Rail Switch.

Designed for mines using rails from 12 to 45 pounds per yard. The switch lugs are die forged, making them strong and secure. The slide plates extend under the stock rails, providing even bearing for both stock and switch rails. Made any length and for any gauge of track.



Built-Up Crossing.

Any type or section of built-up or solid crossings, built either to your specifications or our standards.

Let Us Quote On Your Requirements
Our Motto — Quality and Service

Highly Finished Polychrome Classic Reproductions of Marvelous Beauty

This product, finished in rich polychrome, with genuine antique tints, blends into one harmonious color scheme that is most magnificent. The richness in the character of this high grade line lies in the large quantity of the burnished gold used in the decoration. Charming wedding, birthday, anniversary or holiday gifts which immensely charm the recipient.

PRACTICAL GIFTS THAT BRING HAPPINESS

TABLE LAMP
Renaissance Design

There is a singular grace and elegance characterizing this lovely Renaissance Design Table Lamp that is indeed striking. The footed base and tapering embossed design with pearls defined in ecru tints makes it very exclusive and charming. Height over all, 24 inches. Lovely hand painted floral design parchment shade 20 inches in diameter. Two-light adjustable cluster, silk cord and two-piece plug. Richly polychromed. The soft harmonious colors of stand and shade are very effective and radiate an oriental atmosphere.

No. 4T587L Table Lamp, each **$31.25**

TABLE LAMP (Neptune)

The symmetrical design of vase effect base and the craftship modeling of the clearly defined embossed subjects fully is the greatest work of all art lovers. Height over all, 24 inches. Beautiful hand painted floral design parchment shade 20 inches in diameter. Two-light adjustable cluster, silk cord and two-piece plug. Richly polychromed. The color scheme will add dignity and charm to your living room.

No. 4T920L Table Lamp, each **$32.50**

CANDLESTICK

Floral decoration. Height, 11 inches. Richly polychromed, burnished.

No. 4T497 Per pair **$9.80**

PLAQUE (Young Bacchus Dancing) By Luca Della Robia

There is an intense feeling of inspiration and animation when you view these reproductions. The plaques (Young Bacchus Drinking) shown on preceding page and the two constitute a set. It is executed with the utmost skill, marvelously reproduced in well defined subjects and beautifully finished. Size, 12x24 inches. Terra cotta finish. The background of the finish is sky blue and the design in pearl gray.

No. 4T113 Plaque each **$9.80**

CANDLESTICK

Dome style. Height, 13 inches. Richly polychromed, burnished.

No. 4T517 Per pair **$9.80**

BOOK ENDS

Reproductions of Greek coin relief, richly polychromed, burnished. Size, 5x6 inches.

No. 4T518 Per pair **$10.20**

BUDDHA

Richly polychromed, burnished.

No. 4T708 Book Ends, size 6½x8 inches, per pair **$8.30**

No. 4T728 Buddha Bust, size 9x10 inches each **8.90**

No. 4T738 Buddha Bust, size 18x14 inches, each **14.00**

BOOK ENDS

No. 4T908 Dante, size 7x5 inches richly polychromed, burnished, per pair **$10.80**

BOOK ENDS

No. 4T918 Beatrice size, 7x6 inches Richly polychromed, burnished, per pair **$10.80**

Highly Finished Polychrome Classic Reproductions of Marvelous Beauty

This product, finished in Rich Polychrome, with genuine Antique Tints, blends into one harmonious color scheme that is most magnificent. The richness in the character of this high grade line lies in the large quantity of the burnished gold used in the decoration. Charming Wedding, Birthday, Anniversary or Holiday Gifts which immensely charm the recipient

BUFFET OR CONSOLE SET

This classic Reproduction is a practical Buffet or Console Set will add dignity and charm to buffet or table decorations. The richly embossed subjects are clearly defined and finished in a magnificent Polychrome. The Fruit Tray or Compotier is octagonal in design and measures 10 inches high and 9 inches in diameter. The Candelabras in match of Greek design are 11 inches high.

No. 4T648 597 Complete Three Piece Set as shown, per set $26.60

FRUIT COMPOTIER AND CANDLESTICKS FURNISHED SEPARATELY IF DESIRED

No. 4T640 Fruit Bowl or Compotier each $18.80
No. 4T597 Candlesticks, per pair 9.80

PLACQUE

Madonna by Donatello. A plaque in imitation of antique and highly prized Rich Polychrome finish gold ornament base, slate finish

No. 4T383 Each $5.75

BUST

Many of the finest busts, reliefs and plaques are reproduced in complete view of classic reproductive ware recognized the equivalent of the museum. Fine

No. 4T391 Each $10.85

BUFFET OR CONSOLE SET

A popular seller in a unique hexagonal design. The open work style of the compotier will appeal to those who appreciate an exclusive design. Compotier measures 8 inches in height x 9 inches in diameter. Candelabras to match are 14 inches high. Richly finished in Old English Polychrome decoration finish.

No. 4T639 567 Complete Three Piece Set as shown per set $15.30

COMPOTIER OR FRUIT BOWL AND CANDLESTICKS FURNISHED SEPARATELY IF DESIRED

No. 4T618 Fruit Bowl or Compotier each $7.00
No. 4T567 Candlesticks, per pair 8.30

PLACQUE

Bambino by Donatello. A very popular old art subject, suitable for [illegible] about 7 inches high. Is [illegible] rendered and is exquisite [illegible] that you will appreciate when our specially low price. Measures 4 x 6 inches. Has a Polychrome and gold finish [illegible]

No. 4T34 Each $5.75

BUFFET OR CONSOLE SET

In this well proportioned [illegible] has two [illegible] and is [illegible] pedestal with [illegible] Three Piece [illegible] and [illegible] Finished in a Rich Old English Polychrome

The Fruit Tray or Compotier measures 9 inches in height [illegible] inches. The Candlesticks [illegible]

No. 4T620 607 Complete [illegible]

FRUIT COMPOTIER AND CANDLESTICKS FURNISHED SEPARATELY IF DESIRED

No. 4T620 Fruit Bowl or Compotier each $8.30
No. 4T607 Candlesticks, per pair 8.30

Luger.

Safe, simple in construction, accurate and powerful. The "Luger" automatic pistol, used all over the world in quantities for many years, has proven itself to be one of the most reliable arms ever manufactured, both for military and sporting purposes.

The pulling of the trigger is all that is required of the shooter, as the entire mechanism is operated by the recoil. Detachable magazine concealed in handle, easily taken out and inserted, also automatic stop which holds action open when magazine is empty. Its construction makes it absolutely safe against accidental discharge, whether it dangles from a belt, is carried in the pocket or falls upon the ground.

Made of high grade materials throughout.

No. L32A—.30 caliber; length of barrel 3⅝ inches; length over all 9 inches; takes Luger automatic pistol cartridges; magazine holds 8 shots; net weight 29 ounces. Each..$23 50

One in a box.

Mauser.

The Mauser pistol is perfectly balanced, and its substantial and comfortable grip contributes greatly to the accuracy of shooting, which is further increased by the comparatively great length of barrel and line of sight.

Ease of shipping and assembling. For cleaning purposes the pistol can be taken apart and put together again in a few seconds, no tool whatever being necessary.

The pistol is flat, without sharp edges or projections, and will not bulge the pocket. The recoil is scarcely perceptible.

The safety allows the weapon to be made safe when cocked or not cocked, loaded or not loaded, and, as the breech cannot be opened when the pistol is safe, danger in carrying is obviated, nor can those unacquainted with its mechanism, such as servants or children, make the pistol ready for fire. Nothing but the highest qualty of materials and workmanship used.

No. M25A—.25 caliber; length of barrel 3 inches; length over all 5¼ inches; takes Colt automatic pistol cartridges; magazine holds 9 shots; net weight 18 ounces. Each..$14.25

No. M32A—.32 caliber; length of barrel 3½ inches; length over all 6 inches; takes Colt automatic pistol cartridges; magazine holds 8 shots; net weight 24 ounces. Each.. 14 25

One in a box.

TARGET

Colt's.

.22 Caliber Target Modle.

Takes .22 long rifle rim fire greased either Lesmok, semi-smokeless or smokeless. 6½-inch barrel; 10½ inches over all; 10 shots; weight 28 ounces, full blued, checked English walnut stocks; bead front sight, adjustable for elevation. Rear sight with adjustable screw, adjustable for windage. Distance between sights, 9 inches. Has safety lock within easy reach of the thumb; also thumb grips to compress magazine spring and facilitate loading. Greasless cartridges can only be used when slightly lubricated.

No. 22TA—Weight, packed, about 2 lbs. Each $32.00

.22 Caliber Magazine for No. 22TA—Each $2 00

All above, one in a box.

Reising Automatic.

The Reising .22 Automatic Pistol is the last word in automatic designs. It is simple in construction, strong and durable, of perfect balance and weight, has an automatic safety device, which absolutely prevents accidental discharge when the magazine is removed, can be easily cleaned from the breech and also permits or being used as a single shot target pistol for fine target work more readily than any other type of automatic. It carries a greater number of shots than any automatic pistol on the market, and should prove very popular with those desiring a high class arm of this type; on account of its superior balance, workmanship and finish, and because of its reliability.

It is designed to handle the standard .22 caliber Long Rifle cartridges either Lesmok, Semi-Smokeless or Smokeless and we strongly recommend that greased cartridges only be used.

With its perfect balance and grip, adjustable sights, smooth and easy trigger pull, exposed hammer and long barrel, it is the equal in every respect to a single shot target pistol and being automatic in its action it permits rapid fire practice and does away with the inconvenience of reloading for every shot.

Twelve Shots.

No. 22RA—Take .22 Long Rifle, Rim Fire either Lesmok, Semi-Smokeless or Smokeless. Greased. Capacity of magazine 12 shots; length of barrel 6¾ inches; full length 9¾ inches; full blued finish; checkered stock; square type front sight, adjustable for elevation, rear sight adjustable for windage; distance between sights 7⅝ inches. Weight, each, 31 ounces. Each $32.00

One in a box with complete instructions.

HEATING STOVES

PACIFIC

Nos.	240	280	300	330
Size of collar inside, in.	6	6	6	7
Size of collar outside, in.	6⅛	6⅛	6⅛	7⅛
Length of body, in	24	28	30	36
Weight each, lbs	105	120	150	250
Each	$30 00	34.00	37.50	72.00

Legs bolt on.

The Pacific is a large air-tight stove, suitable for chips, bark, chunks or any wood. It has heavy cast top and bottom, connected with steel rods, reinforced with gas pipe. Body of 16 gauge steel.

LUMBERMAN

Without Shelf or Drum—Body 16 Gauge

Nos.	36	52
Size of Collar, inch	7	7
Height of Collar, inch	28	28
Length of Body, inch	36	52
Diameter of Body, inch	25	25
Weight Each, lbs	200	280
Without Shelf or Drum, Each	$62.00	72.00

Legs Bolted on.

LUMBERMAN

With Shelf

Nos.	36S	52S
Size of Shelf, in	25x30½	25x30½
Height to Collar, inch	28	28
Weight Each, lbs	240	275
With Shelf, Each	$70.00	$80 00

LUMBERMAN

With Drum

Nos	36D	52D
Size of Drum, in	21x36	21x52
Height to Top of Pipe, inch	64½	64½
Weight Each, lbs	300	350
With Drum, Each	$90 00	102 50

CAMP STOVES

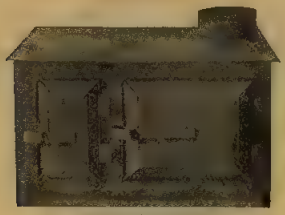
YUKON

Made of 22-Gauge Steel—Asbestos Lining
5-in. Pipe

Nos.	0-22-24	0-22-30	[illegible]
Top, in.	24x14	30x14	19x30
Height, in.	10½	10½	10½
Weight each, lbs.	27	32	42
Each	$10.00	12.00	14.00

Price includes 6 lengths of 14-in. Telescope Pipe

RECREATION



Sheet Steel—Solid Top
5-in. Pipe.

Nos.	127	227	[illegible]
Top, in.	10½x20	12½x20	18x20
Height, in.	10½	10½	10½
Oven, in.	7x10x10½	7x10½x12	7x10¼x17½
Weight each, lbs.	7	9½	11
Each	$3.00	3.50	4.00

Prices do not include pipe.

ALASKA HALF-ROUND

Made from 22-Gauge Sheet Steel
5-in. Pipe—Without Oven.

Nos.	A-024	A-030
Length, in.	24	30
Weight each, lbs.	22	28
Each	$11.00	13.00

OUTING

22-Gauge Sheet Steel Body—Cast Top—Asbestos Lined
Height, 12 in.—5-in. Pipe.

Nos.	222	422
Number of holes	2	4
Top, in.	14x21½	16x24
Oven, in.	7x10x13	7x10½x13
Weight each, lbs.	35	45
Each	$11.00	13.00

20-Gauge Sheet Steel

Nos.	0226	0426
Number of holes	2	4
Top, in.	14x21½	16x24
Oven, in.	7½x11x12	7x10½x13
Weight each, lbs.	26	35
Each	$8.00	10.00

Prices do not include pipe.

ALASKA SQUARE

22-Gauge Sheet Steel—With Oven—5-in. Pipe

Nos.	A-24	A-30
Size, in.	14x24	14x30
Oven, in.	9x13½	9x13½
Weight each, lbs.	26	30
Each	$12.50	14.00

STOVE PIPE DRUMS

Made from 22-Gauge Sheet Steel—With Oven

Nos.	A-5	A-6
Size, in.	14x15	15x15
Oven, in.	9½x14	9½x14
For pipe, in.	5	6
Weight each, lbs.	15	18
Each	$8.00	8 50

SHOTGUNS

L. C. SMITH. HAMMERLESS
DOUBLE BARREL

‡Eagle.

Illustrating Hunter One-Trigger.
See price on one-trigger gun.

For the sportsman who desires a gun of unexcelled shooting properties and unusual decoration we would suggest the Eagle. Manufactured throughout from the finest materials, it ranks among our most popular service guns—the kind that does the execution and does it right.

The decoration, while not elaborate, is of a nature to give the whole gun an air of distinction—a style that classes it far above the usual.

Barrels—Nitro steel or Damascus, bored to order from full choke to cylinder.

Stock—Imported walnut, with any style grip, neatly checkered

With Automatic Ejector.

‡**No. 10SEE—10 gauge, 30 or 32-inch barrel.** Weight from 8½ to 10¾ pounds. Each....$166.10

‡**No. 12SEE—12 gauge, 30 or 32-inch barrel.** Weight from 6¼ to 8½ pounds. Each.... 166.10

‡**No. 16SEE—16 gauge,** 28-inch barrel. Weight from 6¼ to 7 pounds. Each..... 166.10

‡**No. 20SEE—20 gauge,** 28-inch barrel. Weight from 5¾ to 6½ pounds. Each..... 166.10

‡**With automatic ejector and Hunter one-trigger.** Each 196.00

‡**Eagle Grade One-Barrel Trap Gun.**

A made to order gun in which the individuality of the shooter is interwoven with Smith experience to attain the highest test of merit. It is therefore essential that measurements and specifications are furnished with greatest care.

(See copy of order blank.)

‡**No. 1BEG**—Nitro steel barrel; 12 gauge, **30, 32** and **34** inches; bored by the Smith System for perfection in trap shooting. Each.....$187.75
One in a box.

‡Crown.

Illustrating Hunter One-Trigger.
See price on one-trigger gun.

A choice gun with unsurpassed shooting qualities. Manufactured with a view to pleasing the most critical. From an artistic standpoint this gun is of exceptional worth. The detail of the gold inlay and the engraving is delicate and pleasing.

Barrel—Nitro steel or Damascus, bored to order from full choke to cylinder.

Stock—Select imported walnut with any style grip neatly checkered.

With Automatic Ejector.

‡**No. 10SCE—10 gauge, 30 or 32-inch barrel.** Weight from 8½ to 10¾ pounds. Each....$238.15

‡**No. 12SCE—12 gauge, 30 or 32-inch barrel.** Weight from 6¾ to 8¼ pounds. Each....$238.15

‡**No. 16SCE—16 gauge,** 28-inch barrel. Weight from 6¼ to 7 pounds. Each..... 238.15

‡**No. 20SCE—20 gauge,** 28-inch barrel. Weight from 5¾ to 6½ pounds. Each..... 238.15

‡**With automatic ejector and Hunter one-trigger.** Each 268.50

‡**Crown Grade One-Barrel Trap Gun.**

A made to order gun in which the individuality of the shooter is interwoven with Smith experience to attain the highest test of merit. It is therefore essential that measurements and specifications are furnished with greatest care.

(See copy of order blank.)

‡**No. 1BCG** -Nitro steel barrel; 12 gauge, **30, 32** and **34** inches; bored by the Smith System for perfection in trap shooting. Each.....$256.00
One in a box.

‡Monogram.

Illustrating Hunter One-Trigger.
See price on one-trigger gun.

A serviceable gun of more than usual beauty. Designed to meet the demands of sportsmen who want a gun of exceptionally high quality.

The engraving embodying scroll and relief work, is of the utmost distinctiveness both in design and execution.

Barrel—Sir Joseph Whitworth fluid compressed or Monogram steel, bored to order from full choke to cylinder.

Stock—Imported walnut, with any style grip. Carefully finished and neatly checkered.

With Automatic Ejector.

‡**No. 10SME—10 gauge, 30 or 32-inch barrel.** Weight from 8½ to 10¾ pounds. Each....$408.75

‡**No. 12SME—12 gauge, 30 or 32-inch barrel.** Weight from 6¾ to 8¼ pounds. Each.... 408.75

‡**No. 16SME—16 gauge,** 28-inch barrel. Weight from 6¼ to 7 pounds. Each..... 408.75

‡**No. 20SME—20 gauge,** 28-inch barrel. Weight from 5¾ to 6½ pounds. Each..... 408.75

‡**With automatic ejector and Hunter one-trigger.** Each 442.50

‡**Monogram Grade One-Barrel Trap Gun.**

A made to order gun in which the individuality of the shooter is interwoven with Smith experience to attain the highest test of merit. It is therefore essential that measurements and specifications are furnished with greatest care.

(See copy of order blank on page 2253.)

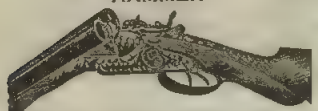
‡**No. 1BMG**—Nitro steel barrel; 12 gauge, **30, 32** and **34** inches; bored by the Smith System for perfection in trap shooting. Each.....$363.75
One in a box.

SHOTGUNS

DOUBLE BARREL

American.

HAMMER



Barrels—Armory steel, specially bored for black or smokeless powder; full choked; matted extension rib. All parts made from drop forgings. Top lever action, bar rebounding locks, spiral main spring. D. & E. fore-end. Guaranteed not to shoot loose.

Stock—Neatly checked pistol grip stock and forearm, rubber butt plate.

No. 012—12 gauge, 30 or 32-inch barrel. Weight from 7¼ to 8 pounds. Each.....$23.00

No. 016—16 gauge, 30-inch barrel. Weight from 7 to 7¾ pounds. Each..... 23.00

No. 020—20 gauge, 26-inch barrel. Weight from 6½ to 7 pounds. Each..... 23.00

No. 028—28 gauge, 26-inch barrel. Weight from 5½ to 6 pounds. Each..... 23.00

No. 0—410 gauge, 26-inch barrel. Weight 4¾ pounds. Each 23.50

HAMMERLESS

D. & E. fore-end. Indicators fitted to the locks, which show at a glance wheether hammers are cocked or otherwise.

No. 612—12 gauge, 30 or 32-inch barrels. Weight about 7⅛ pounds. Each..... $24.00

No. 616—16 gauge, 30-inch barrel. Weight about 7¼ pounds. Each..... 24.00

No. 66—410 gauge, 26-inch barrel. Weight 5¾ pounds. Each 29.00

SINGLE BARREL

HAMMER

Iver Johnson.

Inasmuch as they have been standard weapons for nearly forty years, it seems unnecessary to say much about the general excellence of these shotguns. Sportsmen and dealers all over the world know what the Champion is: a durable, accurate and absolutely reliable single barrel gun; perfect in symmetry, outline and balance; its action developed to the final simplicity; and with a finish that is just as workmanlike on the most hidden part as it is on the handsome, hand rubbed walnut stock.

A Three-Piece Take-Down Gun.

Barrel—Best quality hammer forged, high carbon steel, high polished brown finish, with full choke bore. Case hardened frame, fore-end piece, trigger, hammer and guard.

Stock—Selected black walnut, pistol grip, oil finished by hand; hard rubber butt plate.

Weight about 6¾ pounds.

No. 112—12 gauge, 30-inch barrel. Each.....$12.00

No. 116—16 gauge, 30-inch barrel. Each..... 12.00

One in a box.

With Automatic Ejector.

No. 112E—12 gauge, 30-inch barrel. Each.....$12.50

No. 116E—16 gauge, 30-inch barrel. Each..... 12.50

No. 120E—20 gauge, 28-inch barrel. Each..... 12.50

No. 128E—28 gauge, 28-inch barrel. Each..... 12.50

No. 144E—44 caliber, 26-inch smooth bore barrel, using 44 W. C. F. shot cartridges. Each.... 12 50

No. 1410E—410 gauge, 28-inch barrel, using 410 gauge shot sheels for small game. Each..... 12.50

One in a box.

LAMPS AND FIXTURES

HANGING LAMPS

Central Draft.

Juno, Miller or Rochester Burner.

Patent Lock, Ring Fount Is Put in and Removed from Below.

Juno.

300 candle power burns 12 hours, capacity 1 gallon of oil, patent drip and no possible leak.

Juno mammoth lamps, embossed, polished brass fount, complete with harp and 20-inch corrugated tin reflector, bright inside,

blue outside, 12 in. chimney, No. 3 Rochester wick, height of found, 11 inches; height over all 32 inches.

No. 3—Weight 7 lbs. Each $10.00
One in a box.

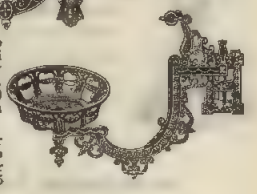
No. 2C—Camp lamp, complete, with No. 10 fount; No. 2 burner, chimney and wick, with 15-inch tin shade. Dozen..$12.00
Open stock—Loose.

LAMP BRACKETS

No. 69—Lamp brackets, bronzed iron. Weight, per dozen, 10 pounds. Per dozen $2.50

No. 71 — Lamp brackets, bronzed iron. Weight, per dozen, 12 pounds. Per dozen..$4.50
One-half dozen in a package.

Wall plates only, for No. 71 lamp brackets. Per dozen $1.25



GLASS FOUNTS

No. 10. No. 20.

No. 10—Glass founts, with outside filler, takes No. 2 burners. Per dozen..... .....$4 00
Weight, per dozen, 13 pounds.

No. 20—Glass founts, with outside filler and handle, takes No. 2 burners. Per dozen.....$5.00
Weight, per dozen, 15 pounds.
Five dozen in a barrel.

No. 21—Plain glass fount, bottom diameter 4¼ inches; length to collar, 2⅞ inches. Takes No. 2 Burner. Per dozen $2.25

GLASS LAMP FOUNTS

No. 800-2A.—Stand lamp fount; height 7½ inches; width at base 5½ inches; brass cap; 1 pint capacity; weight, per dozen, 20 pounds. Per dozen $5.50

Open stock.

KEROSENE TABLE

Champion.

Champion table lamp for kerosene, stands 11⅝ inches high to top of burner, fount holds nearly 3 pints of oil and burns 8 hours. All nickel-plated except flame spreader which is polished brass, separate filler opening, circular wick, 1¾ inches outside diameter, chimney holder lifts for lighting. Each lamp packed in carton complete as shown in cut with the addition of tripod for holding a 10-inch shade. Burner corresponds with that used on No. 2 Miller, Juno or Vesto lamps and takes the same chimney. Chimney dimensions should be 10 inches high, 3½ inches in diameter at bulb, 2⅝ inches in diameter where it rests on the burner, with a straight height at slip of 1 inch and 1¾-inch opening at top. Full directions how to operate are printed on a card and tied to each lamp.

No. 2T—Complete as above with chimney and 10-inch opal shade. Each.....$5.10

One in a box.

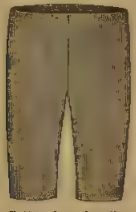
QUARTER SLEEVE JERSEYS

No. 601-W—White Cotton Dozen $18.00
No. 601-B—Black Cotton. Dozen 18.00
Stock sizes, 26 to 44 in.

SLEEVELESS JERSEYS

No. 600-B—Black Cotton. Dozen $18 00
No. 600-C—Crimson Cotton Dozen 18.00
No. 600-W White Cotton. Dozen 18.00
Stock sizes, 26 to 44 in.

KNEE TIGHTS



No. 604-WT White Cotton, knee length .Dozen $18.00
No. 604-BT—Black Cotton, knee length. .Dozen 18.00
Stock sizes, 26 to 40 in.

SPRINTING PANTS

No. 876—White Sateen .Dozen $36 00
No. 873—White Cotton. Dozen 24.00
Stock sizes, 26 to 40 in.

ATHLETIC ACCESSORIES

INDIAN CLUBS

Maple

Weight Each, lbs...	½	¾	1	1½	2	3	4
Per pair...	$0.40	$0.60	$0.70	$0.80	$0.90	$1.50	$2.00

DUMB BELLS

Maple		Iron, Japanned	
Wgt. Each	PAIR	Wgt. Each	POUND
½ lb.	$0 40	2 lbs.	.$0.20
¾ lb.	60	4 lbs.	.20
1 lb.	.70	6 lbs.	.20
1½ lbs.	80	8 lbs	.20
2 lbs.	90	10 lbs.	.20
3 lbs.	1 50	12 lbs.	.20
4 lbs.	2 00	15 lbs.	.20
		20 lbs	.20

IRON SHOT

No. 882—Weight, 16 lbs Each $3 00

QUOITS

Cast Iron, Japanned

NO.	Wgt. Each	SET OF 4
176	1 lb.	$2 00
177	2¼ lbs	3.00
178	3¼ lbs	4.00

DISCUS

OLYMPIAN

Maple. With Brass Center

No. 178—An exact reproduction of those used in the Olympian games at Athens, guaranteed correct. Weight each, 4½ lbs. Each $7 00
No. 818—Malleable iron, same shape and size as No. 178. Each 3.50

VAULTING POLES

Made of extra light and strong selected spruce or bamboo Shod with durable steel spike.

No. 864—Spruce. Length, 16 ft. Each $8.00
No. 806—Bamboo. Length, 16 ft Each 10.00

ATHLETIC ACCESSORIES

IRON HAMMERS

Flanagan Style—Wire Handle

No. 870—Weight, 12 lbs ..... Each $5 50
No. 872—Weight, 16 lbs ..... Each 6 50

HAMMER HANDLES

No. 878 Flanagan style wire handle for above hammers ..... Each $1.00

CROQUET SETS

No. 104—Four-Ball Set, rock maple balls and stakes, varnished, beaded mallets, oiled, with maple handles, ten polished iron arches, in dove-tailed wood box with hinged cover. Weight set, 16 lbs ..... Set $6.00

No. 108—Eight-Ball Set, rock maple balls and stakes, varnished, beaded mallets, oiled, with maple handles, ten polished iron arches, in dove-tailed wood box, with hinged cover. Weight set, 23 lbs. ..... Set $7.50

No. 128—Eight-Ball Set, all parts varnished, mallets painted, two eight-color stakes, ten polished iron arches, in dove-tailed wood box Weight set, 25 lbs ..... Set $8.00

No. 138—Eight-Ball Set, eight finely painted mallets, hand turned, 6-in. long turned handles, with nine fancy stripes, highly polished five-striped balls, two large beaded fancy striped eight-color stakes, heavy galvanized arches, in dove-tailed wood box. Weight set, 30 lbs. ..... Set $10 00

No. 144—Four-Ball Set, medium grade professional, full varnished and striped balls, handles and stakes; 8-in. mallets, with short handles, painted and striped; galv. arches, in dove-tailed wood box. Weight set, 20 lbs. ..... Set $8.00

No. 148—Eight-Ball Set, medium grade professional, full varnished and striped balls, handles and stakes; 8-in. mallets, with short handles, painted and striped; galv. arches, in dove-tailed wood box. Weight set, 34 lbs. ..... Set $12.50

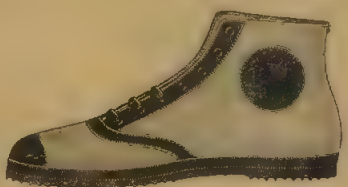
No. 164—Special Four-Ball Set, hand-turned rock maple, with shellac finish; 9-in. ebonized and bronzed mallets, ebonized and bronzed balls and handles. Two large beaded fancy striped and bronzed four-color stakes, with heavy galvanized arches; in dove-tailed wood box. Weight set, 24 lbs. ..... Set $12.50

RUNNING SHOES

No. R-41 Kangaroo leather, English steel spikes, hand made throughout ..... Pair $7.00
No. R-40—Finest kangaroo leather, very light, best English steel spikes ..... Pair 9.00

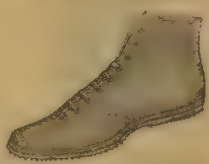
TENNIS SHOES

MEN'S WHITE DUCK



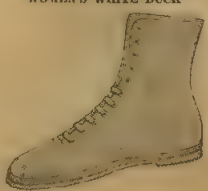
No. 165—Ankle patch, tan trimmed, red soles. Sizes, 6 to 10. ..... Pair $4 00

No. 142½ White rubber soles. Sizes, 7 to 9 Pair $2.00



No. 142 White rubber soles Sizes, 6½ to 9½ Pair $2 50

WOMEN'S WHITE DUCK



No. 442—White rubber soles. Sizes, 3½ to 5½ ..... Pair $2.00

AIR RIFLES

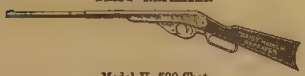
DAISY

Model H, Single Shot

No. 12—Lever action, length 31½ in., shooting barrel removable and shoots either Air-Rifle Shot or 17-100 Darts, single-piece steel barrel nickel plated, black walnut stock. Weight 1 lb. 12 oz. ..... Per dozen, $19 80

One dozen in a box. Weight, 28 lbs.

DAISY REPEATER



Model H, 500-Shot

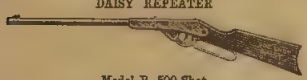
No. 11 Automatic Repeater, with lever action; magazine holds 500 shot; shoots either Air Rifle Shot or 17-100 Darts, single-piece steel barrel nickel plated, black walnut stock Length, 31½ in. Weight, 1 lb. 12 oz. Per dozen, $27 00

DAISY REPEATER

Model B, 1000-Shot

No. 3—Magazine repeater, lever action; magazine holds 1,000 shot and loads by operating the lever; shooting barrel provided with patented shot retainer that enables the user to shoot downward without losing the shot, turned stock of genuine black walnut, with blued-steel butt-plate. Length, 36 in. Weight, 2 lbs. 9 oz. ..... Per dozen, $40 00

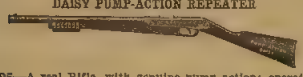
DAISY REPEATER



Model B, 500-Shot

No. 30—Automatic repeater, lever action; same construction and finish as No. 3, but the barrel is 3 inches shorter. Length, 33 in. Weight, 2 lbs. 7 oz. ..... Per dozen, $31.50

DAISY PUMP-ACTION REPEATER



No. 25—A real Rifle, with genuine pump action; operates by pulling the slide toward the stock; fires rapidly from the shoulder, the magazine having a forced feed; a strong and accurate shooter; metal parts in Non-Rusting Gun Blue, stock genuine black walnut hand polished, adjustable sights front and rear. Length, 38 in. Weight, 3 lbs. 4 oz. ..... Per dozen, $60.00

One-half dozen in a case. Weight, 25 lbs

AIR RIFLE DARTS

No. 100—Darts, suitable for use in any Single-Shot Air Rifle. ..... Per dozen cards, $2.50

Packed one dozen on a card, twelve cards in a box.

MARBLE'S GAME-GETTER GUNS

Double barrel. Upper barrel is 22 caliber, rifled, lower barrel 44 caliber and 410 gauge, smooth bored, for shot or round ball. Drop-forged blued steel frame, single trigger, walnut grip, nickel-plated stock.

No. M2112—12 in. barrels, complete with holster. ..... Each, $25.50

No. M2115—15 in. barrels, otherwise same as No. M2112. ..... Each, $27 00

No. M2118—18 in. barrels, otherwise some as No. M2112. ..... Each, $28.50

SINGLE-SHOT TARGET PISTOLS

STEVENS

No. 2210—22 Caliber, 8-in. barrel, tip-up action, hard rubber grips, length over all 11½ in., chambered for 22 Long Rifle Cartridges ..... Each, $15.00

STEVENS OFF-HAND MODEL

Blued barrel, black walnut grips, tip-up action, open sights, chambered for 22 Long Rifle Cartridges.

No. 22356 6-in. barrel ..... Each, $12 50

No. 22358—8-in. barrel. ..... " 13 25

SMITH & WESSON

No. 02210-T—22 Caliber, 10-in. barrel. Weight, 1 lb. 8½ oz. ..... Each, $29.50

The ammunition best adapted for this pistol is the 22 Long Rim Fire Rifle Cartridges. It is equipped with target sights accurately sighted. Any of the above Revolvers can be fitted with pearl stocks at the factory only, the charges for same varying according to the caliber.

TAKE-DOWN REPEATING
HAMMERLESS, TAKE-DOWN, PUMP ACTION
Hamilton.

Every detail of this rifle has been carefully worked out and perfected. Its construction is simple, yet includes every feature essential to safety and perfect operation. Is symmetrical in design and nicely finished. The magazine holds fifteen short rim fire cartridges. The automatic lock prevents accidental discharge while operating the pump action, as the trigger cannot be pulled until breech is locked in firing position. Pump action is automatically locked when the rifle is loaded and ready to fire. A trigger lock in the guard may be used to prevent accidental discharge when the rifle is loaded. This lock is not automatic. Rifle is easily taken down be removing the knurled take-down screw just above the trigger. Barrel is bronze lined, accurately rifled, with solid steel breech. Length of barrel assembly when taken down is 21¼ inches. Front sight knife pattern, rear sight open and adjustable. Stock and forearm of genuine walnut, turned.

No. H39—.22 caliber. Length 35 inches Weight about 4 pounds Each $12.00

One in a box.

REPEATING
STEVENS
Visible Loading.

Fifteen Shots.

No. 7022LR—.22 caliber long rifle rim fire, either black or smokeless, will hold 12 cartridges; adapted to shoot .22 short, .22 long and .22 long rifle; has 20-inch round barrel, extreme length, 35 inches. Weight, 4½ pounds, varnished stock and slide handle, case hardened frame, rubber butt plate, fitted with bead front and sporting rear sights. Each $16.25

All above, one in a box.

SINGLE SHOT
STEVENS
Favorite, Take-Down.

No. 1722—.22 caliber, 22-inch half octagon barrel, walnut stock, rubber butt, case hardened frame. Weight 4¼ pounds. For .22 short, long and long rifle R. F. cartridges. Each $9.25

SINGLE SHOT
MARBLE'S GAME GETTER

Marble's Game Getter gun is a combination .22 and .44 caliber gun. The upper barrel is .22 caliber and the lower barrel is .44 caliber, both smooth bored and adapted to shot or round ball cartridges. Upper barrel chambered for .22 short, .22 long, .22 long rifle, .22 H R A. Lower barrel chambered for .44 game getter Ball & Shot and 2-inch —410 gauge Shot Shell. The stock is adjustable to any drop, folds up or detaches. A push on the striker sets it for either firing pin. Either barrel is used without change of sights or adjustments. Adapted for large game, wing shooting, small game or target practice at the minimum of expense for ammunition. The .44 ball is surprisingly accurate and powerful, and with shot the Game Getter is nearly as effective as a 28 gauge gun. A more accurate .22 caliber is not made. the striker can be set safe, making accidental discharge impossible. Shoots .22CB, .22 short, .22 long, .22 L. R., .44 shot and .44-40 ball, any standard make can be used. Each barrel is thoroughly tested with smokeless powder.

No. M21—12 inch round blued barrel, drop forged blued frame, single trigger, rubber grips, stock—steel tubing nickeled, flexible rear sight, lock leaf sight, gold bead sights and holster. Weight 2¼ lbs. Each.. $26.50

One in a box.

STEVENS
Marksman.

.22 caliber, chambered for 22LR, .22 long, .22 short, C. B. or B. B. caps; 20-inch round tip-up barrel; blued frame; plain lever, positive extractor; full oval stock; shotgun butt with rubber butt plate; bead front and open rear sights. Designed especially for smokeless powder ammunition.

No. 12—Weight, 4 pounds. Each..... $8.65

Ideal.

No. 4422—.22 caliber, long rifle R. F. 24-inch half Octagon barrel. Weight, 7 pounds. Each ... $21 00

No. 4432—.32 caliber long R. F. 24-inch half Octagon barrel. Weight, 7 pounds. Each..... 21.00

All above, one in a box.

SINGLE SHOT RIFLES

Little Scout.

.22 caliber 18-inch round barrel, open front and rear sights, walnut stock, blued barrel and frame. For .22 caliber short, long and long rifle cartridges.

No. 14½-22—Weight, each, about 2½ pounds.
Each $5.40

Crack Shot.

No 26 take down—.22 caliber. Weight 3¼ pounds; 18-inch round barrel; blued frame; lever action; oval stock; carbine butt plate; knife blade front and open rear sights. Specially designed for **smokeless powder** ammunition.

No. 2622—Adapted for C. B. caps, .22 short; .22 long or .22 L. R. cartridges. Each.....$6.50

The barrel is bronze and rifled with great care and has a built-up steel jacket making it unsurpassed in strength, durability and accuracy. A solid breech block makes action absolutely safe.

Length of barrel 16 inches, length over all 30 inches. Fitted with front knife blade and rear open adjustable sights.

No. 27—Chambered for .22 caliber short and long rim fire cartridges. Each.....$3.00

No. 027—Same as No. 27, except fitted with a larger, heavier and better finished stock. Each 3.50

Weight, each, about 2½ pounds.
Packed one in a cardboard box, 10 in a case.

Sharpshooter.

22-inch round barrel; .22 L. R. caliber. Bead front and sporting rear sight. Plain extractor. Steel frame, blued. Lever action, steel lever. Tool steel hammer and trigger. Oval walnut stock, varnished, length 13½ inches; steel butt plate. Walnut fore-end, varnished, 6⅝ inches long. Length over all, 38 inches.

Model B—Weight, 3¾ lbs., shipping weight 4¼ lbs.
Each $8 50

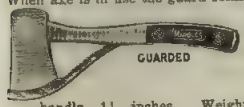
One in a carton; ten in a case.

HUNTING GOODS

HUNTING AXES

Marble's Safety.

Solid tool steel blade; tempered and polished; steel guard fastened to handle with spring hinge and lined with lead to preserve a sharp cutting edge on blade. When axe is in use the guard folds back into the handle.

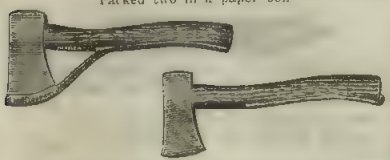


No. 2—Axe sharp, steel handle; engraved hard rubber grip; width of bit 2⅝ inches; length of head 4 inches; length of handle 11 inches. Weight, 20 ounces. Weight, per dozen, 18 pounds. Each.....$3.25

This nail claw is strong enough to pull a ten-penney nail from a seasoned hemlock plank. One can get at and pull a nail with the axe blade and the claw that could not be removed with a hammer alone.

No. 2½—Axe No. 2 with claw. Weight, each, — lbs. Each $3 50

Packed two in a paper box

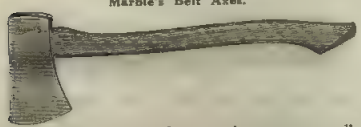


No. 5—Hatchet shape; hickory handle; width of bit 2½ inches; length of head 4½ inches; length of handle 11½ inches. Weight, 16 ounces. Weight, per dozen, 15 pounds. Each 2.00

No. 6—Hatchet shape; hickory handle; width of bit 2¾ inches; length of head 4¾ inches; length of handle 11¾ inches. Weight 22 ounces. Weight, per dozen, 18 pounds. Each 2.25

All above, one-sixth dozen in a box.

Marble's Belt Axes.



Very popular with Boy Scouts and campers, as well as sportsmen. The tempered head will not become battered. The accurately machined eye is fitted perfectly by the handle, and is constructed to give the greatest amount of bearing surface on the handle. These are features that are exclusive in Marble's tool-steel axes.

No. 9—Solid steel blade, 2⅝x4½ inches. Handle, 14 inches. Weight, each, 20 ounces. Each.....$1.50

Marble's Camp Axes.

The tempered head with nail claw will not become battered. The eye is drilled and the selected hickory handle —thoroughly seasoned—fits perfectly. This is just the axe for canoe trips when one night stands may necessitate daily driving of tent stakes and nails.

No. 10—Solid steel blade, 3¼x5½ inches. Handle 16, 20 and 24 inches. Weight, each, 30 oz. Each....$2.50

Packed two in a paper box.

Marble's Axe Sheaths.

Finest strap leather, tan color, strong and well made. Attached to belt.

No. 19—Full length. Each..... .....$1.10

No. 29—For No. 9 Belt Axe. Each..... . .75

No. 30—For No. 10 Camp Axe. Each 75

HUNTING KNIVES

Marble's Ideal Knives.

On account of their quality, combination of several excellent features and beauty of design and finish, this knife won for the makers a world wide reputation as manufacturers of the highest quality of hunting knives. The blade is adapted to sticking and skinning; it is bevel ground at back of point for breaking small bones.

Leather handle; has hilt furnished with No. 39 Sheath.

Knives No. 45 have a heavy tang unto which are driven washers made of sole leather, red and black fibre and brass. Bolster is brass. Tip is aluminum. All parts held rigidly in place by a round brass nut sunk into tip, engaging the threaded tang. Knife is highly polished.

No. 45—5-inch blade with sheath; weight, each, 7 ounces. Each $2.75

No. 45—6-inch blade with sheath; weight, each, 8 ounces. Each 3.00

Packed one-half dozen in paper box.

HUNTING KNIVES

Marble's Ideal Knives.

Stag handle; has hilt furnished with No. 39 sheath.

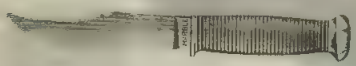
The handles of No. 46 knives are composed of two grooved slabs of selected stag horn carefully riveted together and driven on the tang. Brass bolster. Tip is stag horn. Knife is highly polished.

No. 46—3-inch blade with sheath; weight, each, 7 ounces. Each $3 50

No. 46—6-inch blade with sheath; weight, each, 8 ounces. Each 3.75

Packed one-half dozen in paper box

Marble's Expert Knives.



These knives were particularly designed to meet the requirements of the professional hunter, trapper and guide, who requires a thin, keen edge for dressing skins and furs. The back of blade is designed for scraping skins, while on the forms. Leather handle.

No. 545—Blade 5 inches; weight with sheath No. 34, 6 ounces. Each $2.50

Packed one-half dozen in paper box.

Marble's Safety Hunting Knives.

These knives will appeal especially to that class of woodsmen and sportsmen who object to the sheath knife and yet want a knift that is heavy, strong and rigid. They have a long blade with a short handle, utilizing the extension guard as a safety lock when knife is open. The guard as well as the blade is held in position by a spring when either open or closed. The hilts, one on each side of the blade, and the bolster and lining are nickel-silver. Side plates are genuine stag horn.

No. 83—Blade 4½ inches; weight, with sheath, 6 ounces. Each $3.50

No. 85—Blade 5 inches; weight, with sheath, 9 ounces. Each 4.00

Marble's Woodcraft.

Acknowledged to be the biggest seller of all hunting knives. Some knives are adapted for sticking, some for skinning, still others for cleaning, slicing, breaking bones, etc., but Marble's Woodcraft Knives embody all these desirable features. Handles, 3¾ inches. Construction same as Ideal Knives. Furnished with sheath No. 39.

No. 49—Leather handle, blade 4½ inches; weight, with sheath, 6 ounces. Each $2.25

No. 50—Staghorn handle, blade 4½ inches; weight, with sheath, 6 ounces. Each $3.00

Marble's Knife Sheaths.

Sheath protector always furnished with tube sheath.

No. 34—Tube sheath; 4¼, 5 and 6-inch lengths. Each $0.60

No. 34—Tube sheath; 7 and 8-inch lengths. Each. 75

No. 39—Hilt Knife Sheath; 4¼, 5 and 6-inch lengths. Each 60

No. 39—Hilt Knife Sheath; 7 and 8-inch lengths. Each ..... .75

Marble's Safety Fish Knives

Dotted lines show blade folded within folding handle. The blade is made sharp at back of point for ripping, and the back is an excellent fish scaler. It is also a good all-around pocket knife for sportsmen, ranchmen and stockmen. The blade when folded is entirely protected by the unique nickel-silver handle. When open it is safe and rigid as a one-piece knife.

No. 78—Blade 4 inches; weight, 4 ounces. Each .$1.50

Packed one-half dozen in paper box.

Big Sales

The simplicity of the Shaler is only one reason for its great popularity. More than two million motorists carry it in their cars for emergency roadside repairs.

Our continuous national advertising is winning new friends everywhere — motorists who are enthusiastic about the Shaler and recommend it to their friends — and has created a permanent repeat business on Shaler Patch-& Heat Units. More than thirty million were used last year.

Profitable Shelf Hardware

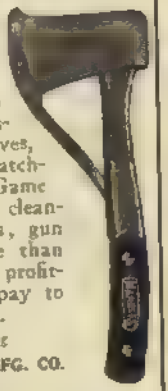
Do you know that the Shaler Vulcanizer is one of the few auto accessories which is staple shelf hardware? It occupies but little space and does not have to be carried in a large range of sizes—one model fits all cars thus making it especially profitable for you to handle whether you carry a complete line of accessories or not.

Buy From Your Jobber Today

C. A. SHALER CO.
1608 Fourth St. Waupun, Wis.

MARBLES
Outing Equipment

FOR EVERY HOUR IN THE OPEN

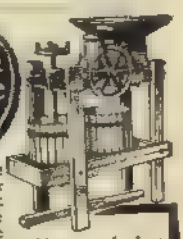


The famous Marble line includes practically every outing specialty necessary to complete the sportsman's outfit — knives, axes, waterproof matchboxes, compasses, Game Getter Guns, gun cleaning implements, gun sights, etc. More than sixty fast-selling profit-makers. It will pay to push Marble's now.

Write for catalog

MARBLE ARMS & MFG. CO.
533 Delta Ave.
Gladstone, Mich.

Don't Overlook this Profitable Line



You know what the demand was last year for cider mills, fruit presses and Grape Crushers. It will be even better this year. Your trade has learned of the handsome extra profits to be derived from making cider, fruit juices, jelley from undergrade fruit. Be prepared to cash in on this business.

Freeman Cider Mills, Fruit Presses and Grape Crushers

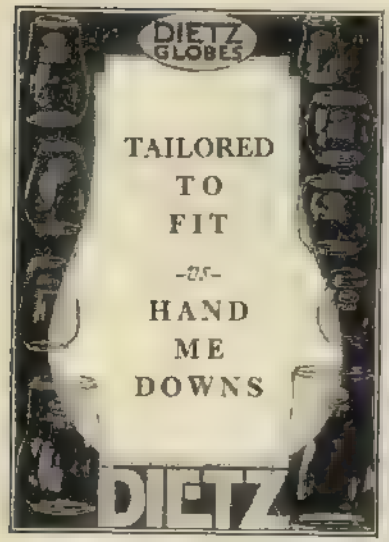
meet every demand in size, style and quality. Made in both single and double tub styles, of finest materials by skilled experienced workmen. The larger sizes equipped with power pulley if desired.

The Standard for Half a Century

Get our catalog describing the complete Freeman line, including our special wood roller Grape Crusher. Sell the mill that gives complete and lasting satisfaction — that sells on its reputation. *Write today to get this issue. Get catalog and prices.*

Write Department 363
FREEMAN MFG. CO.
Racine, Wisconsin

FREEMAN MANUFACTURING COMPANY



TO place other than a Dietz Globe in a Dietz Lantern and call it a "lamp" is akin to outfitting oneself in a suit of hand-me-downs."

The flame in a Dietz Lantern is just as incomfortable and inefficient in a globe whose "middle" has had as little consideration as you would be in clothes chosen with like disregard for your form and shape.

In short Dietz Globes have an exclusive design which facilitates combustion, contributing in no small measure to the high illuminating power of Dietz Lanterns which is unequalled by kerosene lanterns of any other make.

The 1924 price of Dietz Globes also merits attention.

R. E. DIETZ COMPANY
NEW YORK

Largest Makers of Lanterns in the World
Output Distributed Through JOBBERS

FOUNDED 1840

DIETZ LANTERNS

NOW is the time to Push

MARBLE'S
Outing Equipment

Stock and display Marble's Axes, Knives, Game-Getter Guns, Pocket Compasses, Waterproof Matchboxes, Gun Cleaning Implements, Gun Sights, Etc., and cash in on the sales popularity which has been created through more than a quarter century of leadership.

Catalog and Prices On Request

MARBLE ARMS & MFG. CO.
533 Delta Avenue
Gladstone Michigan

"FAVORITE" Farm Level

Easy to use. Assures correct lines and grades for draining, terracing and laying out roads.

Used by farmer, builder and landscape gardener.

Complete outfit in case, with tripod and rod, lists at $25 00

Liberal discount to dealer

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KEUFFEL & ESSER CO.
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W. T. McCULLOUGH ELECTRIC CO.

317-319 First Avenue

PITTSBURGH, PA.

Electrical Supplies

Products

We have a complete line of everything Electrical for coal mine service, including Mine Hangers, Expansion Bolts, Trolley Wire Splicers, Trolley Wheels, Trolley Clamps, Strain Insulators, Carbon Brushes, Commutator Cement, Friction Tape, Knife Switches, Safety Switches, Telephones, Lamp Guards, Conduit, Condulets, Rubber Tape, Panel Boards, Lightning Arresters, Flashlights, Batteries, Benjamin Reflectors, Enclosed Fuses, Renewable Fuses, Mazda Lamps, Portable Electric Drills, Insulating Materials, Soldering Irons, Air Heaters, Bare and Insulated Wire and Cable, Wiring Devices of all kinds, Flood Lights.

Electric Soldering Iron

The superiority of American Beauty Soldering Irons over ordinary soldering tools is so great as to make their use the source of the greatest satisfaction.

Electric Soldering Iron

The fact that they are always ready for use, that each size is equipped with a suitable length of cord and supplied with a lamp socket attachment plug, thus permitting them to be used any place where an ordinary lamp socket is available makes their use particularly desirable. Carried in stock in different sizes.

Benjamin Weatherproof Signal

Benjamin Signals, for calls or warning, have a peculiar, penetrating tone pitch, which makes

them more effective as audible signals for mining use, than the old type gong or vibrating bell.

Can be furnished for use with either D. C. or A. C. current.

Economy Renewable Fuses

Economy Renewable Fuses furnish proper protection under all conditions of service and save 80% of your fuse cost. They are renewed by inserting the original "Drop Out" renewal links and are approved by the Underwriters' Laboratories in all sizes up to and including 600 amp. 600 volt. See page 419.

Economy Renewable Fuse

Crouse-Hinds Floodlight Projector

It has a heat-resisting semaphore lens in the front door and a heat-resisting prism glass reflector on the inside of the rear door. The lens and reflector are not affected by lamp heat, gasses, rain, or snow. The focusing mechanism is made of cast brass.

Square D Safety Switches

The use of Square D Safety Switch is a safeguard for men and machinery against accidents. They are built in more than 300 different types and sizes, which makes it possible to secure a switch for every possible service.

Square D Switch

Square D Safety Switches are listed as standard for both fire and accident prevention by the Underwriters' Laboratories of the National Board of Fire Underwriters and were the first to bear the combined label.

Mazda Lamps

"WESTINGHOUSE MAZDA" on the label of a lamp is absolute assurance that you are buying a lamp which represents the last word in scientific development and durable construction. The Westinghouse Mill Type Mazda has been developed for use where a lamp is required to stand up under the most severe service. These lamps are particularly adaptable for mine work. They give three times the light at half the wattage of the obsolete carbon lamps formerly used under heavy vibrating conditions.

Mazda Lamp

Bulletins

Bulletins of any of the above products will be sent to those interested upon request.

WESTERN ELECTRIC COMPANY

INCORPORATED

ALBANY	CLEVELAND	JACKSONVILLE	NEW YORK	ST. PAUL
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BOSTON	DENVER	MILWAUKEE	PHILADELPHIA	SEATTLE
BROOKLYN	DETROIT	MINNEAPOLIS	PITTSBURGH	SPOKANE
BUFFALO	DULUTH	NASHVILLE	PORTLAND	SYRACUSE
CHARLOTTE	GRAND RAPIDS	NEWARK	PROVIDENCE	TACOMA
CHICAGO	HOUSTON	NEW HAVEN	RICHMOND	YOUNGSTOWN
CINCINNATI	INDIANAPOLIS	NEW ORLEANS	ST. LOUIS	

Equipment for Every Electrical Need

Western Electric

Mine Supplies

General

The Western Electric Company is prepared to furnish equipment for every electrical need in the mine. Ample stocks are constantly maintained at each of our distributing houses to give customers the best possible service. We are emergency specialists.

The following are some of the complete lines carried. They are the best of their kind. The name Western Electric guarantees their high quality.

Overhead Materials

Western Electric Line Material for mine railways covers such items as trolley wire suspensions, clamps, cones, ears, plugs, lags, insulators, frogs and crossings—an exceptionally complete line.

Low Mining Suspension

Car Parts

This line includes standard Kalamazoo trolley wheels and harps, poles, headlights, lamps, circuit breakers, rheostats, commutator parts, cordage, brushes and brush holders—designed for service and low maintenance costs.

Roof Plug and Lag

Mining Machine Cable

Duplex mining machine cable consists of flexible strands, rubber insulated. Each conductor is finished with a waterproof braid. Two conductors are then laid parallel and covered with two or three braids of hard cotton, which is then thoroughly water-proofed. Mining machine cable can also be furnished single conductor.

Ear

Magnet Wire

Enamel coated, cotton and silk covered magnet wire of high conductivity carried in stock in large quantities.

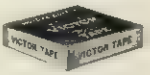
Deltabeston magnet wire is especially efficient wire for field and armature coil winding. It is flexible and moisture and fire-proof, having an asbestos insulation.

Motors

Direct and alternating current electric motors and control for every phase of mine work—for cars, hoists, pumps, crushers and ventilating fans. They are built to the most rigid specifications and every step in manufacture is thoroughly inspected. Western Electric Motors require a minimum of servicing to give maximum service.

Western Electric Motor

Tapes



Western Electric Tapes are particularly adapted to mine service. They are moisture repellent, contain no free sulphur, do not unwrap or dry out and have excellent adhesive qualities.

Three grades are made—Amazon, an especially high grade tape for armature windings, field coils and line work; Victor, a tape excellent for ordinary lighting circuit work and a Waterproof tape for joints subject to moisture or seepage.

Flood and Utility Lights

No. PS-2 Bracket Mounted

Davis Flood Light Projectors are recommended to increase the efficiency of night work.

Davis Flood Light Projectors are manufactured in seven standard types, ranging from searchlight with long narrow beam, to small portable wide angle beam type. A focusing attachment is provided to regulate the projected beam within limits.

Each type is constructed to best suit the particular class of work for which it is designed. Combination base and bracket is packed with every "Davis" Projector.

Square "D" Safety Switch

Square "D" Steel Enclosed Industrial Switches are designed for use with motors on 3-phase straight and star-delta circuits 250 and 500 volts.

Through use of these switches, men and machines are safe guarded against the accidents common when the obsolete open knift switches are used.

D & W Fuses

These fuses are designed for accuracy and safety. They meet every requirement of the National Electric Code and can be relied upon to withstand great mechanical strains and the most severe electrical conditions, and at the same time afford the required protection.

Other Mine Supplies

Habirshaw Wire and Cables; bushings for oilless lubrication; cut and uncut mica; insulating cloths, paper and varnishes are all part of a line of supplies that includes everything electrical for the mine.

Catalogs

Catalog matter describing fully each Western Electric line will be sent upon request.

UNBREAKABLE CARNIVAL DOLLS

MECHANICAL

Composition bodies, practically unbreakable, with movable arms, the most appealing expressions, daintily tinted features, painted hair coiffures.

Doll with sateen dress in assorted bright colors, gathered top, hoop skirt, tinsel trimmed, silver head band with plume.

No. 34N25. 16-inch Doll.
Per dozen..... 7.25
Per doz. in case lots of 4 doz. 7.00

Shimmying, Shaking, Shivering, she stands in your booth and draws the crowd. A simple mechanism with extra fine key-wind clock spring motor enables this little lady to give a most amazing demonstration of the famous Hula Hula dance. About 16 inches high. Real hair wig, long silk fringed skirt. Each in box. Six dozen in case. **No. 34N42.**
Per dozen..... 17.50

Composition bodies, practically unbreakable, with movable arms, the most appealing expressions, daintily tinted features, painted hair coiffures.

Doll with sateen dress in assorted bright colors, gathered top, hoop skirt, maribou trimmed, bloomers to match. Complete with head band.

No. 34N37. 16-inch Doll.
Per dozen..... 8.75
Per doz. in case lots of 4 doz. 8.50

Doll with sateen dress in assorted bright colors, gathered top, fan shape skirt trimmed with maribou and tinsel, bloomers to match.

No. 34N28. 16-inch Doll.
Per dozen..... 9.25
Per doz. in case lots of 4 doz..... 9.00

FLIRT DOLL

Her Eyes Won't Behave. Wonderful key wind clock spring motor moves eyes from side to side vamping the customer from the booth across the way. 16 inches high and dressed modishly in silk, fan style with maribou trimming. Silk bloomers. Elaborate coiffure real hair wig. Hair net and veil, well finished throughout. Assorted color dresses. Each in box. Six dozen in case.

No. 34N43.
Per dozen..... 24.00 | Each..... 2.10

GORGEOUS DISPLAY

Doll with assorted bright colors. Genuine ostrich feather plumes in contrasting delicate tints. (Figure 8 style). Doll full 16 inches with plume full 22 inches high.

No. 34N29. 16-inch Doll.
Per dozen 9.50
Per doz. in case lots of 4 dozen 9.25

The Limit of Value

CONCESSIONAIRES—THE BEST MAMA DOLLS ON THE MARKET AT THE PRICE

Full 28 inches high. Beautiful, baby-like, unbreakable composition head, 17 inches in circumference. Hand painted with every detail worked out even to the eyelashes. Painted hair. Composition hands. Cotton stuffed legs have loose joint at hips for walking. Guaranteed **Ronson** Mamma Voice—always ready to talk. Assorted Boy Dolls in rompers and cap, and Girl Dolls in dress, bloomers and bonnet. All have button slippers and stockings. Dresses made of assorted patterns and colors of cloth. Each doll packed in individual box. 6 dozen in case.

No. 36N15. Per dozen..... **18.50** | In case lots of 6 dozen. Per dozen..... **18.00**

THE LIMIT OF VALUE

21 Inches High
Bobbed Hair Wig
Composition Legs
Guaranteed Ronson Voice

We do not know how to give you a better value in a beautiful Mamma Doll than we offer you here. This doll was made for us specially, according to our own specifications and in a quantity sufficiently large to make this special price possible. It is full 21 inches high, and has 2¾ inch diameter molded compositoin legs identically like the fat legs of a baby. Cute bobbed hair wig showing from under the hood in front with a stray lock curling out at the side or in the back. Beautifully shaped unbreakable head, tinted by an artist. Dainty, fimy dresses, lace trimmed. Full body underwear. Lace trimmed cap with bows of ribbon. Button shoes and stockings. Loose hip joints for walking. Guaranteed Ronson Mamma Voice—always ready to talk. Each doll in box. 6 dozen in case.

No. 36N58. Per dozen..... **21.00** | In case lots. Per dozen..... **19.50**

21 Inches of Solid Value
All Cotton Stuffed

Another Limit of Value Doll. This is a quality doll. The very best workmanship. Height 21 in. Stuffed throughout with carded cotton. Finest features Unbreakable composition head and arms. Full proportioned. Assorted colors checked overdresses. Bloomers and bonnets to match. Guaranteed Ronson Mamma Voice. Always says "Mamma." Loose jointed at hip for walking. Each in box.

No. 36N8. Per dozen assorted color dresses **17.50**

CHADWICK PICTURES CORPORATION

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CHADWICK

"MEDDLING WOMEN"

in

Written & Directed by

IVAN ABRAMSON

A powerful melodrama based upon a vital theme of universal interest.

Enacted by a superlative cast. In support of Mr. Barrymore: Miss Sigrid Holmquest, Miss Dagmar Godowsky, Hugh Thompson, Ida Darling, Antonio D'Alagy, Alice Hegeman.

KEEP OPEN DATES FOR THE CHADWICK 9
"The Leading Independent Unit"

1
'THE FIRE PATROL'
A Hunt Stromberg Production

2
'MEDDLING WOMEN'
Starring Lionel Barrymore

3
"The PAINTED FLAPPER"
with James Kirkwood and Pauline Garon

4
"I AM THE MAN"
Starring Lionel Barrymore
Written and directed by Ivan Abramson

5
"THE TOM BOY"
With an All Star Cast

6
SUNSHINE OF PARADISE ALLEY"
From the Famous Stage Play by Denman Thompson

7
The Third Lionel Barrymore Special
(Title to be Announced)

8
"FLATTERY"
Produced by Mission Film Corp.

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"THE ROMANCE OF AN ACTRESS"
By Langdon McCormack, Author of "The Storm"

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"EACH PRODUCTION AN ACHIEVEMENT"

A Comedy with one laugh— it starts in the First Reel and *Never Stops!*

CHADWICK PICTURES CORPORATION *presents*

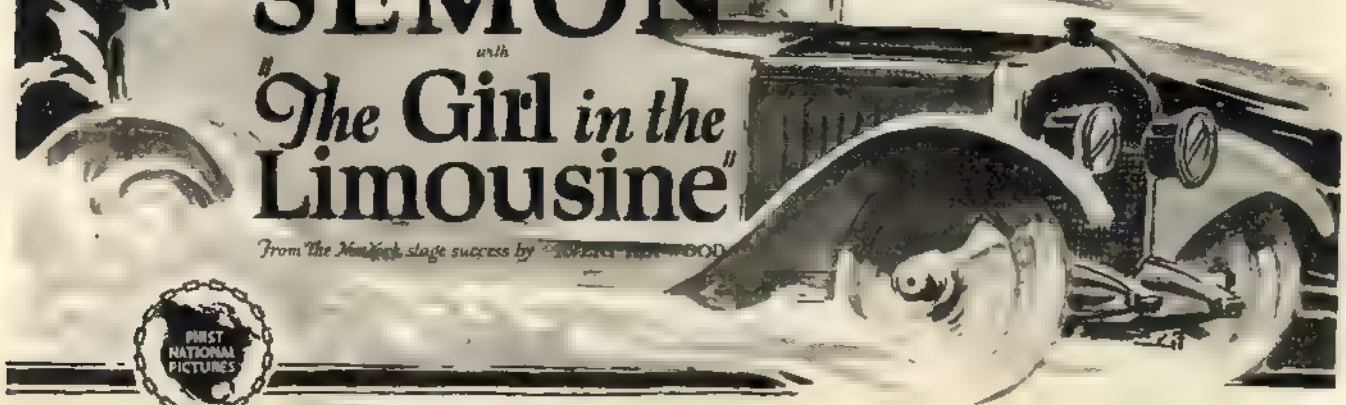
LARRY SEMON

with

"The Girl in the Limousine"

From the New York stage success by [illegible]

His first feature comedy



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The Exhibitor who wears the Smile that won't come off is the Exhibitor with a FIRST NATIONAL Contract

BATIK ENAMEL

Puts Color in the Home

Women buy the striking Batik colors on sight for old and new breakfast room, sun porch, wicker furniture, etc.

The Colors Do It!

Send for interesting combination card and full description of display and local resale service. Liberal profits.

ADAMS & ELTING CO.
1833 Seward St.
Brooklyn CHICAGO Kansas City

Silver Lake Sash Cord

Sold by Net Weight Guaranteed
Full Lengths
Established 1869
Order Thru Your Jobber
If your Jobber does not handle —write direct

Silver Lake Co.
Newtonville, Mass.

FIRE-PROOF A-B Stove Polish

Gives Perfect Results on Warm or Cold Stoves.

THE ORIGINAL AND ONLY GENUINE "FIRE-PROOF"

A-B Polish Co.
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Accept No Inferior Substitutes Sole Mfgrs., Est. 1881

EMPRESS AUTO ASH TRAY

List Price $1.00 Each.

Write for Folder 5A AF23

BOWEN PRODUCTS CORP.
AUBURN, NEW YORK

30% to 40% Profit

on

"PEERLESS"

Automatic Rat and Mouse Traps

Only trap that positively captures and kills automatically and continuously. A world beating seller. Over 150,000 in use. Endorsed by largest concerns. Nationally advertised. Guaranteed. Write for Dealers' Prices.

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The "Okeh"

Write for free copy of new "Okeh" Bite Book. Complete catalog on request if you give your jobber's name.

114 Years Ahead

WHEREAS the ordinary multiplying reel for bait casting is today just the same as it has been without change for 114 years, the Meisselbach "Okeh" embodies the best advantages and refinements of design made since the first multiplier was invented—is the most perfect bait casting reel. Has "take-apart" design, cork arbor automatic free spool, level winding, no interference with casting.

Meisselbach

Fishing Reels of Quality

A. F. MEISSELBACH MFG. CO., Inc.
25 West 45th Street New York City

Say you saw it in GOOD HARDWARE

METALCRAFT PLAYONS

TRADE MARK REG U.S. PAT. OFF

What Will You Buy?

Jobbers—a hundred of them; Dealers—thousands of them today know through actual buying and repeat orders that the Metalcraft Line of Playons afford the greatest selling values for dealer and consumer. Sturdy—every part all-steel—built like a rock to stand the gaff of hard service. Beautiful—masterpieces of merchandise, priced right through quantity production. Ask what the price! Ask whom we sell! Ask what the profit! See the Samples! Then decide, as have the biggest buyers in the great Hardware world. Write.

SPECIFICATIONS

MATERIAL:—Steel throughout, riveted and electrically welded, wood handle.

COLOR:—Cherry red, with ivory stripings on wheels.

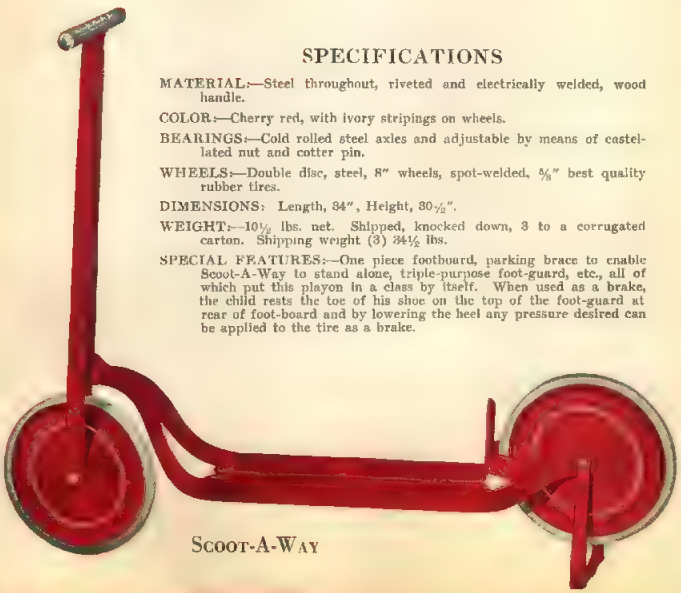
BEARINGS:—Cold rolled steel axles and adjustable by means of castellated nut and cotter pin.

WHEELS:—Double disc, steel, 8" wheels, spot-welded, 5/8" best quality rubber tires.

DIMENSIONS: Length, 34", Height, 30 7/8".

WEIGHT:—10½ lbs. net. Shipped, knocked down, 3 to a corrugated carton. Shipping weight (3) 34½ lbs.

SPECIAL FEATURES:—One piece footboard, parking brace to enable Scoot-A-Way to stand alone, triple-purpose foot-guard, etc., all of which put this playon in a class by itself. When used as a brake, the child rests the toe of his shoe on the top of the foot-guard at rear of foot-board and by lowering the heel any pressure desired can be applied to the tire as a brake.



SCOOT-A-WAY

METALCRAFT PLAYONS

TRADE MARK REG. U.S. PAT OFF

RIDE-A-WAY

SPECIFICATIONS

MATERIAL—Steel throughout, riveted and electrically welded, finished in cherry red, with ivory stripings on wheels.

HANDLEBARS—All steel, nickel plated, motor cycle type rubber handle grips.

WHEELS—Double disc steel, 6" rear, 8" front, spot-welded, ⅝" best quality rubber tires, axles of cold rolled steel, doubly reamed improved steel bushings.

PEDALS—Corrugated non-slip rubber, large size 2 x 1¼ x 1 inches.

DIMENSIONS — Length 26¼", wheel base 18"; height, saddle to floor, 12"; handlebars to floor, 20½".

SHIPPING — Knocked down, 2 to a corrugated carton, 11 x 12 x 17. Net weight, 10¾ lbs. Shipping weight (2), 23 lbs.

WALK-A-WAY

SPECIFICATIONS

MATERIAL—Steel throughout, riveted and electrically welded, finished in cherry red, with ivory stripings on wheels.

HANDLEBARS—All steel, nickel plated, motor cycle type rubber handle grips.

WHEELS—Double disc steel, 6" front and rear, spot welded, ⅝" best quality rubber tires, axles of cold rolled steel, doubly reamed improved steel bushings.

DIMENSIONS — Length, 22½"; wheel base, 16½"; height, saddle to floor, 10"; handlebar to floor, 17".

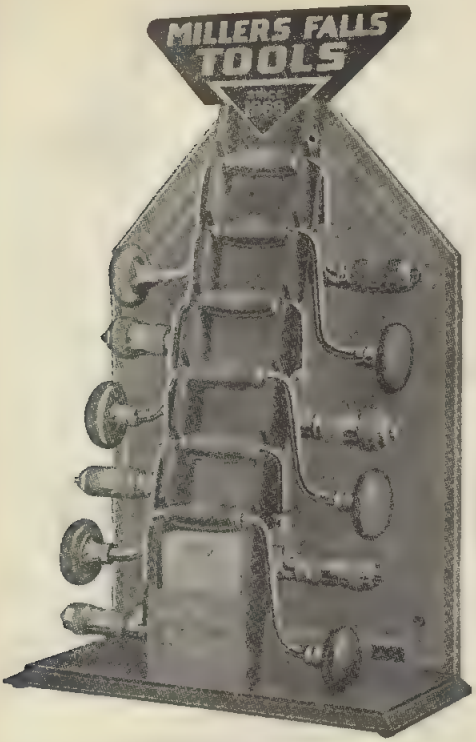
SHIPPING — Knocked down, 2 to a corrugated carton, 11 x 12 x 17. Net weight, 8½ lbs.; shipping weight (2), 19½ lbs.

There is a tendency on the part of manufacturers and the public as well, to prefer steel in manufacturing products wherever it can be used, for the reason that there is no raw material more durable or serviceable. Metalcraft Playons are quickly and easily assembled. Our prices are right, our Playons are right, our service is constantly being improved and our output is steadily increasing. All products manufactured by our Company are fully protected by patents and registered trademarks.

METALLIC INDUSTRIES, INC.

SAINT LOUIS, U.S.A.

BIT BRACE DISPLAYS



BRACE DISPLAY No. 600

This New Millers Falls Brace Display fairly speaks an invitation to the prospective buyer to pick up and examine each brace. It has an individuality that makes it stand out in any window or on any counter. It is compact, takes up little space, strongly built and artistic in design. It will demand attention from any part of your store and add to its general appearance. The fixture itself is given to you free of charge with an order for the following Millers Falls Braces

⅛ doz. No. 872; ¼ doz. No. 772. ⅛ doz. No. 732. ⅛ doz. No. 8132. ½ doz No. 332

One hundred descriptive leaflets imprinted with dealer's name and address supplied with each display.

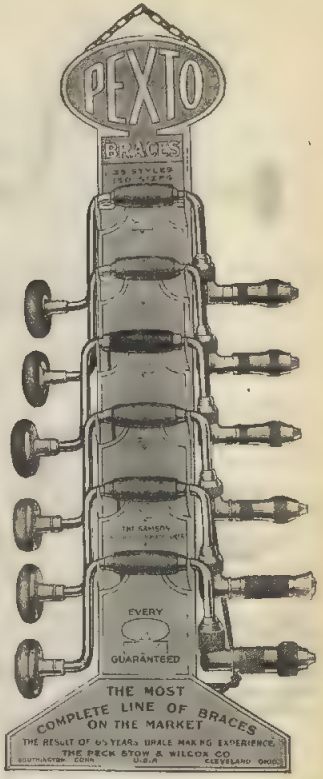
SPECIFICATIONS

Height—32 inches to top of trade mark.
Width—18 inches.
Base of wood.
Back of tin on wood frame.
Wood rack for holding Braces.
Lithographed in Four Colors.

Shipping weight, 100 pounds. Weight, with 6 braces, 26 pounds.

No. 600—Brace Display Fixture with 2 each Nos. 872, 772, 732 and 8132; 4 No. 32 and 6 No. 322 Braces.....Per Assortment, $57.00

Packed—Each Fixture Packed in an Individual Carton.



BRACE DISPLAY No. 8

The Display Fixture is metal and is lithographed in four colors: Orange, blue, black and white. It is equipped with wire easel for standing on the counter or in the window and chain hanger for hanging on the wall. It is sent gratis with each assortment. The assortment consists of twelve Pexto Bit Braces, six of which can be mounted on the Display Fixture. The Braces displayed are the most popular styles and sizes.

The Assortment consists of the following Pexto Bit Braces.

Nos. 8210, 8310, 5010. ½ dozen each.
No. 5310, ¼ dozen. No. 8910, ¼ dozen
No. 3410, ⅓ dozen.

No. 8—Brace Display Fixture with One Dozen Braces, assorted.....Per Assortment, $41.70

Packed—The Display Fixture is packed in a corrugated box, the Braces packed two in a cardboard box. The Display and Assortment complete in a wooden case, size 42x16x18 inches. Weight, 60 pounds.

Send for this new and dramatic Miller Lock Window Trim

Thousands of retailers saw it at the big Philadelphia Hardware Exposition, and it stopped all of them. The compliments we received were extremely gratifying.

There are seven pieces as shown above, lithographed in eight colors, and packed in substantial shipping cartons.

With these several pieces and whatever extra stock you have on hand—Miller padlocks, night latches and cabinet locks; a Miller display panel, stand or counter carton, or all—you can easily fix up a window that will arrest the attention of passersby and bring many new customers into your store.

Requests for this handsome trim are being received daily. We don't know how long our supply will last, so be sure to send in your name as early as possible.

If your stock is low, an order to your jobber mailed at the same time you write to us will bring both locks and trim at about the same time. Don't be afraid to make the order a little larger than usual. The window will clear it out for you in jig time.

Miller Lock Company

Established 1871 — Philadelphia, U. S. A.

Padlocks, Night Latches, Cabinet Locks

Write for new Catalog, No. 29, of Miller Locks

ELECTRIC SERVICE SUPPLIES CO.

Manufacturer of Railway and Mining Electrical Supplies

GENERAL OFFICES AND FACTORY:

17th and Cambria Streets, Philadelphia, Pa.

Branch Offices

CHICAGO, ILL.—Monadnock Bldg.
NEW YORK, N. Y.—50 Church St.
SCRANTON, PA.—316 N. Washington Ave.
PITTSBURGH, PA.—Oliver Bldg.
Gee Electric Co., Wheeling, W. Va.
Franklin Sales Co., Denham Bldg., Denver, Colo.
Baldwin Supply Co., Charleston, W. Va.
Philipsburg Foundry & Machine Co., Philipsburg, Pa.
Canadian Agents,—Lyman Tube & Supply Co., Ltd., Montreal, Toronto, Winnipeg, Vancouver

"Golden Glow" Incandescent Mine Headlights

"Golden Glow" mine locomotive headlights provide maximum illumination under all mining conditions with low current consumption and maintenance costs.

They are equipped with "Golden Glow" mirror reflectors made of greenish yellow glass. In the process of manufacture, these reflectors are first pressed to approximate shape in moulds and while hot the inner surface of the blank is polished by means of a patented, fire blast process resulting in a finish of exceptional quality. After thorough annealing the back or reflecting surface is accurately ground and polished by special patented machinery to a true parabolic contour. This back surface is then silvered like the finest French plate mirror, this silvering being protected by heavy copper plating over same and this heavily coated with a special metallic paint.

Resulting from this process, the "Golden Glow" reflector becomes one that is unaffected by moisture, gases and temperature and will not tarnish, corrode or peel. Being made of glass, they are permanent, are easily wiped clean with a rag without danger of scratching the reflecting surface and will retain their initial high efficiency indefinitely.

Thru the medium of the greenish yellow glass reflector, the brilliant white light from the incandescent bulb is altered in color and in its place projected a light rich in golden yellow rays,—the "Golden Glow". This light is not nearly so blinding and is considerably more penetrating in dust, fog and smoke than a brilliant white light.

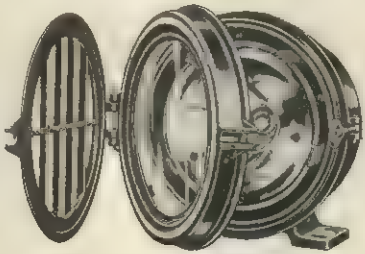
"Golden Glow" mine headlights have the reflector flexibly suspended in the case to prevent the possibility of vibration breaking the lamp filament.

Headlight cases are made in two general styles, namely; with all parts of drawn steel, electrically welded or with all parts of cast iron, the main body portion cast in one piece, both styles being finished inside and out in baked black enamel. Doors are fitted with gaskets and a compression latch to produce a water-proof enclosure.

Headlights are provided with a means of focusing the lamp which enables the operator to bring the center of the lamp filament into the correct focal point of the reflector, thus securing proper distribution and maximum amount of light projection.

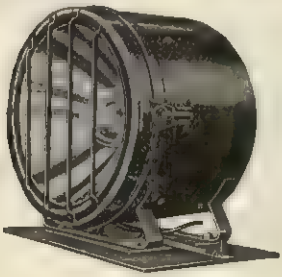
Write for complete data.

Type MLC-96
Cast iron case 9-inch Golden Glow reflector. Total height 11¼ inches. Made also with turret base.

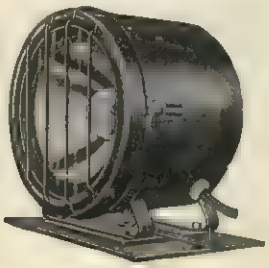


Type MLC-96 With Hinged Grid
Cast iron case 9-inch Golden Glow reflector. Total height 11¼ inches. Made also with turret base.

Type MLCR-74
Cast iron case 7-inch Golden Glow reflector. Made also without turret base, which type has total height of 10⅞ inches.



Type MLR-96
Drawn steel case 9-inch Golden Glow reflector. Made also without turret base, which type has total height of 11⅞ inches.



Type MLR-74
Drawn steel case 7-inch Golden Glow reflector. Has turret base. Total height 11⅝ inches.

Type ML-74
Drawn steel case 7-inch Golden Glow reflector. Total height 11⅞ inches.

THE OHIO BRASS COMPANY

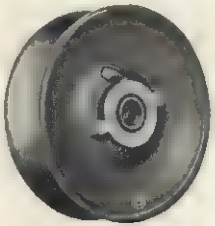
MANSFIELD, OHIO, U. S. A.

New York Philadelphia Pittsburgh Charleston, W. Va. Chicago Los Angeles San Francisco
Paris, France

Products

Trolley Harps and Wheels. The Ohio Brass Company is also exclusive sales agents for Crouse-Hinds Imperial Headlights. For detailed information on O-B Materials write for General Catalog and on Headlights for Imperial Catalog.

See Page 448 for Line Materials and Page 991 for Track Materials.



4" Wheel

6" Wheel

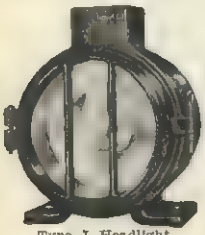
Specially designed Mine Trolley Wheels of phosphor bronze. Have large oil reservoirs and heavy flanges to withstand running on mine roof.

Regular 4" Harp

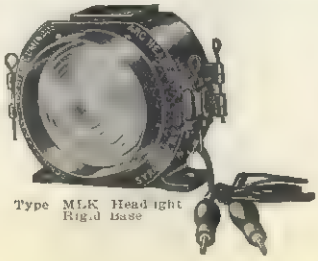
Regular 6" Harp

Spring Alining Harp

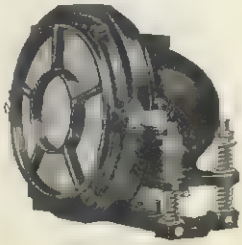
The "Regular" Harp is a swivel design of large bearing area and heavy phosphor bronze contacts. The Spring Alining type is similar to the Regular type and in addition is provided with a spring which tends to keep the wheel in alinement. This feature is of advantage under certain operating conditions, particularly when backing through frogs, crossings and special work.



Type I Headlight
Cast Iron Case



Type MLK Headlight
Rigid Base



Type MH Headlight
Spring Hinged Suspension

MINE SAFETY APPLIANCES CO.

Chamber of Commerce Building
PITTSBURGH, PA.

Branch Offices

CHICAGO
CLEVELAND
SAN FRANCISCO

DENVER
HUNTINGTON, W. VA.
ST. LOUIS

LOS ANGELES
NEW YORK
SEATTLE

PHILADELPHIA
PITTSBURG, KANS.
WILKES-BARRE, PA.
(Kingston)

Everything for Mine and Industrial Safety

The New Edison Model E Electric Safety Mine Lamp

Approved by the U. S. Bureau of Mines.

Over 200,000 Edisons installed throughout the United States, Canada and Mexico.

Installations everywhere have proved the Safety, Efficiency and Durability of these lamps.

Specifications

Type of Battery.....M-14
Number of Cells..... 2
Rated Capacity,
Ampere hours.....12
Hours Illumination
after full charge.....12
Normal Charging Rate
Amperes 2¼
Length of Charge, hrs.. 8

Weights:
2 Cells Assembled, ozs. 52
Monel Container, ozs..12
Headpiece, ozs. 20

Total ozs. 84

Special Features

Provides a clean light of nearly six candle power.

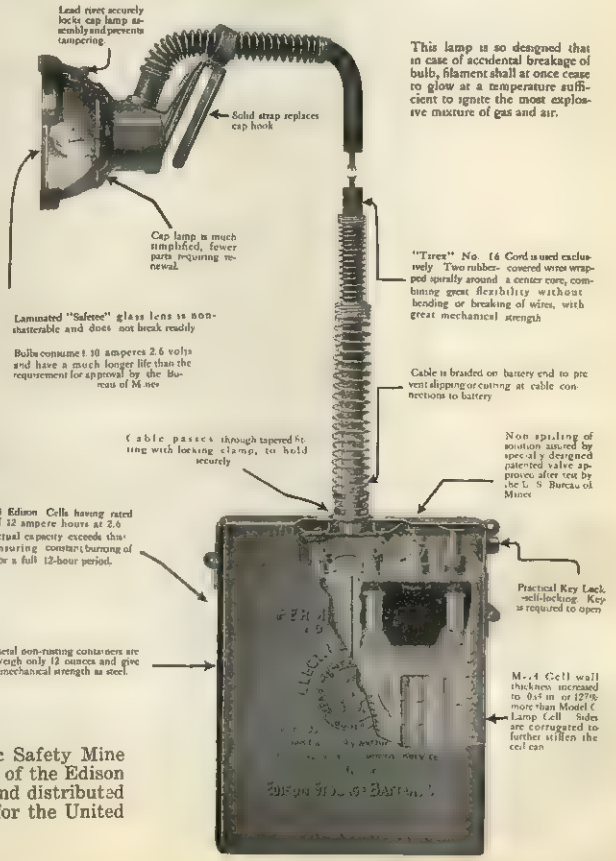
Burns 12 hours continually or intermittently without any attention.

Remains indefinitely in charged or discharged condition without deterioration.

Costs less for upkeep and gives more light throughout the average shift than open lights.

Three times as much light as Model "C" (Approved No. 10) Edison Lamp, 50% more illumination than any other approved cap lamp.

The New Edison Lamp in Use


Lead rivet securely locks cap lamp assembly and prevents tampering
Solid strap replaces cap hook
Cap lamp is much simplified, fewer parts requiring renewal
This lamp is so designed that in case of accidental breakage of bulb, filament shall at once cease to glow at a temperature sufficient to ignite the most explosive mixture of gas and air.
"Tirex" No. 14 Cord is used exclusively. Two rubber-covered wires wrapped spirally around a center core, combining great flexibility without heating or breaking of wires, with great mechanical strength
Laminated "Safetee" glass lens is non-shatterable and does not break readily
Bulbs consume 1.10 amperes 2.6 volts and have a much longer life than the requirement for approval by the Bureau of Mines
Cable is braided on battery end to prevent slipping or cutting at cable connections to battery
Cable passes through tapered fitting with locking clamp, to hold securely
Non-spilling of position assured by specially designed patented valve approved after test by the U. S. Bureau of Mines
Two M-14 Edison Cells having rated capacity of 12 ampere hours at 2.6 volts. Actual capacity exceeds this figure, insuring constant burning of the bulb for a full 12-hour period.
Practical Key Lock, self-locking. Key is required to open
Monel metal non-rusting containers are used. Weigh only 12 ounces and give as much mechanical strength as steel.
M-14 Cell wall thickness increased to 0.05 in. or 127% more than Model C Lamp Cell. Sides are corrugated to further stiffen the cell can

All models of the Edison Electric Safety Mine Lamps are manufactured at the plant of the Edison Storage Battery Co., Orange, N. J., and distributed by the Mine Safety Appliances Co., for the United States and Canada.

EDISON LAMP WORKS

OF GENERAL ELECTRIC COMPANY

Harrison, N. J.

Offers You Free Lighting Service

Our trained engineers, who have studied mine lighting requirements, can help you on these problems:

1. The prevention of lamp stealing.
2. Reduction of lamp breakage.
3. Lighting of the headings and faces.
4. Switch signal lighting.
5. Lighting of motor repair pits.
6. Efficiency of 110, 220 and 500 volt lighting systems.
7. Where to use reflectors; proper types and sizes.
8. Lighting the foot of the shaft without shadows.
9. Proper lamps for miners' caps.
10. Locomotive headlight lamps.
11. Eliminating lamp breakage in the breaker.
12. Increasing efficiency of picking bands and picking chutes through proper lighting.
13. Lighting of driving gears, etc., as a means of providing quicker repairs.

The Edison Lamp Works of the General Electric Company make all sizes and types of MAZDA lamps; complete stocks are carried in every part of the country.

Special Lamps for Mine Lighting

In addition to the regular sizes and types of lamps special lamps are made which are particularly adapted to mining.

220, 230, 240 and 250 volt lamps are now furnished in 25 and 50 watt sizes mine type construction. This construction is very rugged and enables the lamp to better withstand the shock incident in mine use.

100, 200, 300, 500, 750 and 1000 watt gas filled (MAZDA C) lamps are also made in these voltages.

For 275 volt lines the 50 watt mill type lamp is recommended.

525, 550, 575, 600, 625 and 650 volt lamps can be obtained in either 23, 36, 56 or 94 watt sizes. For headlights at these voltages, there is a special concentrated filament lamp which can be obtained in either 23, 36, 46, 56 or 94 watt sizes.

If you want lighting layouts, lighting recommendations or specifications, write to the Edison Lamp Works of General Electric Company at Harrison, N. J. or any of the branch offices throughout the United States and your request will receive immediate attention.

Monroe Calculating Machine Company

WOOLWORTH BUILDING, NEW YORK

Pittsburgh Division Offices
Bessemer Building
Pittsburgh, Pa.

St. Louis Division Offices
Syndicate Trust Building
St. Louis, Mo.

San Francisco Division Offices
417 Market Street
San Francisco, Calif.

A Machine for Every Figuring Need

The Monroe line of figuring machines offers a service of exceptional value for every business office. Any and every form of calculation from the simple additions of debits and credits, the subtraction for balances, multiplications and divisions in discounts, unit costs, payrolls, etc., to the complicated formulae of engineering work, are easily and accurately handled on the Monroe.

Models and Sizes

Hand - Operated Model. The operation of this model is described below. It is made in three sizes—20-, 16- and 12-Place capacities.

Automatic Model. The Automatic Model is operated by a small, compact motor at the left of the machine, as shown in illustration. Touch the Plus (+) Bar to add or multiply, the Minus (—) Bar to subtract or divide. These Bars replace the crank of the hand models; otherwise the operation is the same. Made in 20- and 16-Place capacities.

Tonnage Model. The Tonnage Model Monroe is provided with keys for Hundredweight and permits the handling of addition, subtraction, multiplication and division of tons and hundredweight directly, the machine automatically converting hundredweight to tons and vice-versa.

This is the only machine of its kind that handles this work without the use of decimal equivalents. Made in 20- and 16-Place capacities.

There are also Monroe models provided with fraction keys and pounds, shillings, pence and farthings keys, which are, in reality, two adding and subtracting machines and a calculating machine all in one. 20-, 16- and 12-Place capacities.

THE 20-PLACE AUTOMATIC MODEL

MONROE

The High Speed Adding-Calculator that won first four prizes for Speed and Accuracy in the World's contest at Paris and was awarded the Grand Prize and Gold Medal for excellence at Turin, Italy.

Addition

The Monroe Method of Locked Figure addition gives greater protection against errors of the "human element" than any other method.

You set the number on the keyboard and a short quick turn of the crank adds it into the lower dial. The number also remains on the keyboard giving a subsequent check on the number added and the opportunity of correcting it, if wrong. Setting the next number on the keyboard automatically releases the previous number, and a forward turn of the crank accumulates the total in the dials.

Subtraction

The Monroe gives you the fastest subtraction you can ever witness — because it is a direct operation.

The larger number in the dials, the smaller number on the keyboard, a quick reverse turn of the crank subtracts the smaller leaving the Remainder in the dials.

No complements to carry in your mind, no roundabout method. The Monroe method of subtraction is simple and direct just as you learned it in school.

Multiplication

Multiplication the Monroe way, is one of the biggest features desired in a calculating machine. The number to be multiplied is set on the keyboard, the multiplier is turned into the upper dials —the lower dials show the result. As fast as two numbers can be written, the Monroe gets the answer, and more than that—**proves it!** The work is fast because of the short circular crank motion, and Proof is given by the Keyboard and the extra set of dials. The multiplier may be changed at will, thus shortening many calculations.

Division

The direct subtraction feature and two sets of dials make the Monroe the ideal machine for division, for it is done as with pencil and paper but with mechanical speed and without mental effort. The number to be divided is turned into the lower dials, the divisor set on the keyboard and subtracted from left to right. The Answer appears in the upper dials.

The "Building-Up" Method of division will interest you; it is fast and expedient and when finished you have the dividend, the divisor and the answer all before you as visible proof of accuracy.

Monroe Service is Available at All Principal Points in the United States and Canada and Throughout the World.

ERNST & ERNST

Offices

NEW YORK	CLEVELAND	PITTSBURGH	CHICAGO	ATLANTA
BUFFALO	CINCINNATI	WHEELING	MILWAUKEE	NEW ORLEANS
ROCHESTER	TOLEDO	ERIE	MINNEAPOLIS	DALLAS
BOSTON	COLUMBUS	DETROIT	ST. PAUL	HOUSTON
PROVIDENCE	YOUNGSTOWN	GRAND RAPIDS	DAVENPORT	FORT WORTH
PHILADELPHIA	AKRON	KALAMAZOO	DENVER	SAN ANTONIO
BALTIMORE	CANTON	INDIANAPOLIS	LOS ANGELES	WACO
RICHMOND	DAYTON	ST. LOUIS	KANSAS CITY	OMAHA
MEMPHIS	LOUISVILLE	SAN FRANCISCO		

Federal Tax Office
910 to 918 Munsey Building
Washington, D. C.

Audits and Systems
Tax Service

Ernst & Ernst through their 44 offices are equipped to serve the Coal Mining Industry in the solution of its Accounting problems.

Audits

Periodical audits that have for their purpose the determination of the accurate financial condition of a business, a correct and properly arranged statement of Income and Expenses, and analysis of mine operations as reflected by the books of account and records. A comprehensive audit brings to light the wastes and leaks of business, the possibilities for greater progress, better methods, and the maximum of protection against bookkeeping errors.

The corner-stone of the foundation of the credit structure is the availability of credit at the proper time and in the proper proportion to the needs of business as a whole. Only through the medium of a complete audit can the banker feel the pulse of the borrower.

Systems of Accounting and Cost Accounting

A wide experience gained in serving many clients in the coal mining industry has made it possible to develop systems that are readily adapted to the requirements of the Coal Mine Accounting office. These systems cover the whole field of accounting, embracing cash and inventory control, payroll, stores, billing and all the report forms and detail pertaining thereto.

Budget

The Budget protects profits by preventing loss. It justifies the spending of money by necessity and expediency—not by tradition. It is the one dependable safeguard against overproduction, overexpansion and overexpenditure. It is the link of confidence between business and its creditors.

Insure your profits by operating your business on a budget basis—a Business Guide, to be checked with actual expenditures.

Graphics

Clear and accurate mental pictures of your business activities and the conditions of trade are vital to successful management.

The preparation of Charts is based on sound engineering and accounting principle. And by the use of simple standardized methods, the actual preparation of Charts is made simple and practical by the clerks of your own office.

Our pamphlet on Business Graphics with simple Charts in colors to Executives and Managers on request.

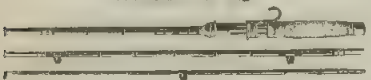
CASTING

Montague City.

Split Bamboo.

Three pieces and extra tip; full nickel-plated mountings; solid metal reel seat; silk wound spiral guides, cork grip, finely varnished, length 6½ to 9½ feet; packed in wood form and cloth bag.

No. 401—6½ to 8 feet. Each.....$3.20
8½ to 9½ feet. Each..... 3.20
One in a cloth bag.

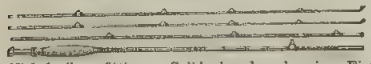


No. 1031—Three pieces, six strips, selected bamboo; closely wound with green and red silk; welted Kalamazoo guides; full nickel-plated mountings and reel seat; cork grip; finger pull; varnished with a weather and waterproof varnish; length 5½ feet. Weight, per dozen, 4½ pounds. Each $2.70
One in a cloth bag.

FLY

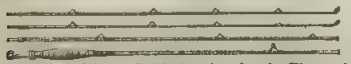
Split Bamboo.

Winchester.



Nickel silver fittings. Solid ringed cork grip. First guide one-ring with genuine agate, others snake style made of bronzed steel. Machine welted serrated ferrules. Both tip joints furnished with angle tip, one of nickel plated steel, the other of genuine agate. Stock used in joints of these rods is scientifically treated, knots matched and sections straightened by expert. Carefully wound with best grade of orange and black silk. Tips in bamboo tip case. Designed for dry fly casting.

No. 7260—Lengths 9½, 10 feet. Weight, each, 6 ozs. Each $19.10
Packed in partitioned canvas bag.



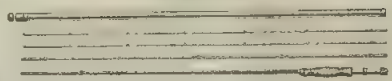
Nickel silver fittings. Solid ringed cork grip. First guide one ring style of genuine agate the rest snake style of bronzed steel. Ferrules hand welted, water-proofed and serrated. Both tip joints furnished with angle tip, one of nickel plated steel and the other of agate. Attractively wound with jet black silk trimmed with green. Only carefully selected bamboo strips used. All six strips of each section cut from the same piece of bamboo. Carefully treated and matched to insure fine action. All strips and sections straightened by experts before assembling. Tips in bamboo tip case.

No. 7264—Length 9½ feet. Weight, each, 5½ ounces. Each $24.00
Packed in partitioned canvas bag.

FLY

Montague City.

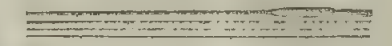
Radio.



Specially treated, selected steel vine cane, making a beautiful brownish colored rod of extreme stiffness. German silver mounted throughout. Extra fine hand welted, serrated ferrules, special waterproof reel seat, wood extending full length of solid cork grip shaped to fit the hand. Made offset German silver top. Bronze steel snake guides. Closely wrapped with a beautiful design of silk windings in two colors. Finely finished with elastic waterproof varnish. Put in aluminum tip case, and canvas partition bag.

Radio—Length, 9½ ft.; weight, each, 5¼ oz. Each $33.50

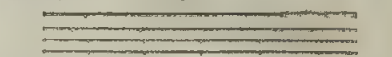
Montana. Made from selected cane.



Three pieces and extra tip. Long, solid cork grip Made from selected cane. Full bronzed mountings, serrated and hand-welted ferrules, hand-made reel plate below the hand. Silk-wound bronze steel snake guides and fly tops, closely wrapped with jasper and scarlet silk. Finely finished and put up in a velvet covered form and canvas bag.

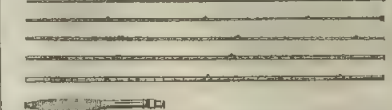
Montana Special—Lengths, 9 and 9½ feet. Each $26.70

Fine Split Bamboo.



Three pieces and extra tip. Solid cork grip. Made from selected cane, full nickel silver mountings, hand-made reel plate below the hand, fine nickel silver serrated ferrules. Silk-wound bronze steel snake guides and fly top. Closely wound with lemon colored silk. Finely finished and put up in a velvet covered form and canvas bag.

No. 712⅛—Length, 9 to 9½ feet. Each.....$19.30



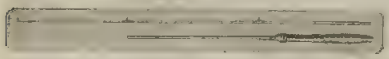
Combination; split bamboo commination rod. Four pieces, with extra stout tip, and a detachable reversible cork grip, with an inserted shortener. One can make three different rods of this rod, can place the reel seat above or below the handle, making a three-piece rod 7½ feet, and a four-piece rod 10 feet, and with the aid of the inserted shortener can make a 5½-foot casting rod. Made from fine selected cane; full nickel-plated mountings; solid metal reel plate; improved ferrules, welted. Silk wound German silver snake guides, and closely wrapped with scarlet and yellow silk.

No. 0—Finely finished and put up in a canvas partition bag. Each $11.30

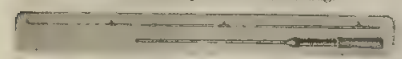
CASTING

Split Bamboo Bait.
South Bend.

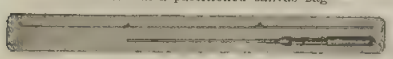
Good quality split bamboo tip and butt. All fittings nickel silver. All guides and angle tip are genuine Garnix. Solid ringed cork grip. Ridged reel band with finger hook. Pinned ferrules. Wrapping of red silkaline.
No. 7—Length, 4½ and 5 feet. Weight, each, about 4½ ounces. Each.....$7.00
Packed one in a partitioned cloth bag.



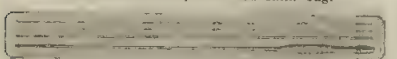
Fine quality split bamboo. All fittings nickel silver. Double grip or solid ringed cork, equipped with substantially constructed knurled ridged reel band with finger hook. Guides and angle tip are genuine Garnix. Attractively wrapped with red silk.
No. 10—Length, 4½ and 5 feet. Weight, each, about 5½ ounces. Each.....$10.00
Packed one in a partitioned cloth bag.



Fine quality split bamboo. Nickel silver fittings. Machine welded ferrules. Double ringed cork grip. Golden yellow windings of highest grade Japan silk. Bamboo used in this rod is carefully treated to give life and action. All sections matched.
No. 14—Length, 4½ and 5 feet. Weight, each, about 5¼ ounces. Each.....$14.00
Packed one in a partitioned canvas bag



Special Light Construction.
Highest grade selected split bamboo, carefully treated to give life, action and resiliency, this light, whippy type of rod should possess. Equipped with nickel silver fittings. Double ringed cork grip. Wrapped in goldenrod yellow, red and black Japan silk. Genuine offset agate tip and one ringed guides.
No. 18—Length, 4½ and 5 feet. Weight, each, about 4½ ounces. Each.....$18.00
Packed one in a partitioned satin bag.

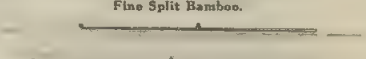


Special Light Construction.
Specially selected highest grade split bamboo All sections carefully matched to insure perfect action balance. Red silk and goldenrod yellow wrappings a genuine Japan silk. Double ringed cork grip. Genuine agate guides and offset casting top. Extra tip joint.
No. 25—Length, 4½ and 5 feet. Weight, each, about 4½ ounces. Each.....$25.00
Packed in partitioned cloth bag in aluminum rod case.

Tournament, Fine Split Bamboo.
Montague City.

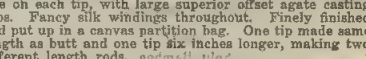
One-piece with detachable butt. Made of selected bamboo; German silver mounted; two genuine agate guides and genuine agate top; silk wound at intervals and finely varnished. Double solid cork handle, the lower grip shaped to fit the hand; patent locking reel seat.
No. 00—Lengths 4½ to 5 feet. Each.....$28.70
Put up in canvas partition bag.

Fine Split Bamboo.

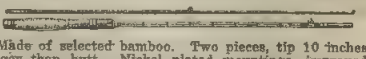


Two pieces with extra tip. Double solid cork grip with flat screw on butt cap. Made from fine selected cane. Full nickel silver mountings, improved ferrules, serrated. Silk-wound, large agate guide on butt, also one on each tip, with large superior offset agate casting tops. Fancy silk windings throughout. Finely finished and put up in a canvas partition bag. One tip made same length as butt and one tip six inches longer, making two different length rods.
Model 1—This rod is made 5 feet long, with longer tip 5½ feet long. Each.....$19.20
Put up in a canvas partition bag.

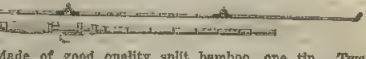
Split Bamboo Bait Casting Rods.



Made of split bamboo. Two pieces. Nickel plated mountings, improved ferrules, finger hook band, casting top Cork grip, two ring casting guides, wound red and green, varnished. Put up in cloth partition bag.
No. 1021—Length 5 to 5½ feet. Weight of 5½ ft. rod, 6½ ounces. Each.....$2.40



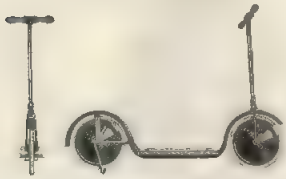
Made of selected bamboo. Two pieces, tip 10 inches longer than butt. Nickel plated mountings, improved welted ferrules, finger hook band, special casting top. Shaped wood grip, spider guides, wound red and black, nicely varnished. Put up in cloth partition bag.
No. MC15—Length 5 to 5½ feet. Weight of 5½ foot rod, 5½ ounces. Each.....$4.70



Made of good quality split bamboo. one tip. Two pieces. Cork grip. Nickel plated mountings, finger hook, improved welted ferrules, imitation agate guides and top. Wound with two colors of silk. Put up in a cloth partition bag.
No. MC30—Length 5 and 5½ feet. Weight of 5½ foot rod, — ounces. Each.....$6.90

CHILDREN'S VEHICLES AND REPAIR TIRES

MOTOY SCOOTER

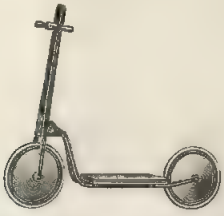


One long piece of enamel steel forms frame and fenders. Bicycle fork construction, one bolt assembles. 10½-inch double disc steel wheels with large rubber tires, reinforced auto steel rims. Standard bicycle cups, cones and ball bearings. For children 6 to 12 years old.

No. 34—Motoy Scooter. Each, $7 80

Packed one in a carton.

BUDDIE SCOOTER



Black enameled steel frame, striped in gold. Red enameled wood handle bar, natural finish. Foot board stenciled in green; red enamel steel disc wheels with ⅝-inch rubber tires. Wheels 10-inches in diameter, with roller bearings. Length 36-inches, height 30 inches, height of footboard 5½ inches, size of footboard 5x13 inches. Weight 12 pounds

No. 425 Buddie Scooter. . . . . Each, $7 20

One in a crate.

SPEED-WAY KING

Finest materials, workmanship and extraordinary features have made this Scooter a great favorite. Footboard 15½ inches long, 4½-inches wide. Steering knuckle made of heavy cast bronze milled to fit heavy king pin accurately. Frame under slung design rigid truss construction. 10-inch double disc wheels, roller bearings, double strength folded rims, ¾-inch rubber tires. Finish: red wheels, green post, frame and fender. Equipped with a powerful brake

No. 110 Speed-way King Scooter. Each, $6 50

No. 108—Speed-way King Scooter, same construction as the No. 110, except it has an 8-inch double disc wheel, ⅝-inch tire and is not equipped with a brake. Each, $5 20

TOY BARROWS

The body is of sheet steel, round wire-interwoven edges, painted green enamel, decorated in gold bronze. The frame is of selected hardwood, natural finish. The wheels are painted red enamel, decorated in golden yellow.

Nos.	25	26
Size of body, inches	9x12x4½	10x14x5
Length of handle, inches	30	32
Size of wheel, inches	8	10
Weight per dozen, pounds	70	88
Per Dozen	$21 00	25 20

Packed 6 in a crate

CALCUTT'S QUICK REPAIR RUBBER TIRES

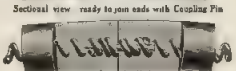
For Go-Carts, Baby Buggies, Sidewalk Sulkies, Velocipedes, Etc.

Sectional views of Calcutt's Quick Repair Tire. Coiled wire runs through entire length of tire, preferably with the coupling pin as its ends. It helps to turn the ends of coils together.

Pat. June 23, 1914 Pat. July 28, 1914

Sectional view ready to join ends without Coupling Pin

Sectional view ready to join ends with Coupling Pin



Sectional view after joining ends with Coupling Pin

No need to remove wheels, not even when re-tiring forked wheels on collapsible carts. Saves labor. Made of extra quality rubber. No machine necessary for putting tires on wheels. No remnants. Couple short pieces and avoid waste of material. Directions in each box.

Nos.	3850	1250	5850	3460	7850	150
Size tire, inch	¾	¼	⅝	¾	⅞	1
Feet in Box	50	50	50	50	50	50
Couplings in box	30	30	30	30	30	30
Weight per box, pounds	7	10	12	19	27	36
Per Box	$7 50	10 00	15.00	20 00	26 00	32 00

QUICK REPAIR TIRE NIPPERS

CORRECT METHOD FOR CUTTING TIRE

Made expressly for cutting Calcutt Tires. Fine leverage for cutting steel or iron, bolts, screws, etc. They snip off clean. The set screw will regulate the wear.

No. QRT—Weight, 4 lbs. . . . . Per Pair, $5.70

One in a sealed box.

F. B. O. Releases Five New Productions

FIVE special productions are scheduled for October release by F. B. O., with Emory Johnson's latest, "Life's Greatest Game," heading the list. "Life's Greatest Game" opens shortly in New York.

Next on the list comes 'The Stranger from Nowhere," a tentative title, which will soon be changed. This is the first Harry Garson production, starring Maurice B. (Lefty) Flynn. His leading lady is Gloria Grey. The film is set for October 5 release.

On October 12, "Broken Laws," Mrs Wallace Reid's production, will be shown. This is the first picture Mrs Reid has made following 'Human Wreckage." "Broken Laws" is being sponsored by Women's Clubs throughout the United States, and the exploitation campaign to be waged by F. B. O will be bigger than that for "Human Wreckage."

"The Prude," which is the first of the Gothic Pictures to star Evelyn Brent, British screen star, is set for October 19 release. Miss Brent will be directed by Tod Browning, who did much to bring Priscilla Dean to the heights.

The third Carlos production, starring Richard Talmadge, as yet unnamed, is set for October 26 release. This will be a rapid-fire comedy drama, in which Talmadge performs more than his share of stunts. Mr. Talmadge has entirely recovered from his recent accident, which he incurred while filming "Stepping Lively."

Two chapters of "The Go-Getters" series, co-starring Alberta Vaughn and George O'Hara, are set for October release. Number three, "And Never the Trains Shall Meet," on October 13 and number four, "A Kick for Cinderella," will be released on October 27.

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BROADWAY SHOWING FOR "ROMOLA"

Arrangements between Metro Goldwyn and Inspiration for the distribution of "Romola" have been completed, and exploitation plans for a Broadway premiere are already in execution.

* * *

'NEVER SAY DIE' FOR 'LEVIATHAN'

The U. S. Shipping Board has signed a contract for "Never Say Die," Douglas MacLean's comedy, and the first print was assigned to the S.S. Leviathan.

Among the many notables who will have a chance to laugh at the comic antics of Douglas MacLean was the party of Jackie Coogan, who sailed on the Leviathan on his European relief trip.

Jacqueline Logan, popular artiste, descending the staircase in the youthful manner—in Producer's Distributing Corporation's recent production "The House of Youth," adapted from the novel by Maude Radford Warren.

Lionel Barrymore's coming Chadwick production "Meddling Women" gives the star excellent opportunities for dramatic delineation of the role he assays.

BARTHELMESS SELECTS HIS WIFE AS LEAD

Richard Barthelmess has engaged Mary Hay his wife as leading woman for his next production, "New Toys," for First National release.

"New Toys" will mark Mary Hay's return to the screen for the first time since David Griffith's "Way Down East," in which Mr. Barthelmess was leading man and Miss Hay played a prominent role. It was during the filming of "Way Down East" that Miss Hay and Mr. Barthlemess were married. Since her marriage she has progressed steadily with her stage career and she has been conspicuous in many Broadway successes. Last season she was a hit in "Mary Jane McKane."

* * *

FIRST NAT'L INCREASES SMALL TOWN SALES

Great improvement in the motion picture business as its affects the small town is reported by First National Pictures, Inc., which states that the sales of its previous season's product has greatly increased during the past few months in the smaller towns—the bulwark of this business.

This increase is corroborative evidence of the validity of the prediction of a prosperous new season made a short time ago, basing the prophecy on the biggest August sales for current product in the history of the company, and the very optimistic reports brought to the home office by its branch managers.

"This is due mainly to the exceptional merit of the 1923-24 product and of the new pictures now being released by First National, together with the increasing prosperity of the country as a whole," said E. A. Eschmann. "Our salesmen have found the exhibitors in the small town in an unusually attentive frame of mind when they call upon them; often they go after the pictures

Goldwyn in N. Y.

Seeking Ideas for New Productions

SAMUEL GOLDWYN who arrived in New York from Hollywood on Monday, comes this time on a special mission. The producer is in quest of what he calls new central ideas for his future productions.

During his visit to New York, Mr Goldwyn will also close for some books, plays and short stories. Primarily, however, Mr. Goldwyn will be receptive to basic ideas around which he can build distinctive and out of the ordinary photoplays or which can be injected into adaptations of novels and plays without changing the plot yet heightening the interest.

"By this plan I hope to draw to the photoplay a type of mind alive with ideas, yet not skilled in dramatic technique," says Mr. Goldwyn. "I have found that in this business like any other, ideas are dollars, and I am willing to pay for any such central dramatic situations which I consider of value for my future productions. The idea's the thing! These need not be in novel, play or story form. I am interested in the idea."

Mr. Goldwyn's future plans call for his most ambitious program since his advent as an independent producer two years ago. George Fitzmaurice's next production which follows "Tarnish" will be an adaptation of Leonard Marrick's novel "The Worldlings" and will appear on the screen some time in January as "A Thief in Paradise."

Another "Potash and Perlmutter" picture, to follow "In Hollywood with Potash and Perlmutter" is also planned, which will make the third of this series, now considered an Institution of Laughter.

While here Mr Goldwyn will see the New York premieres of his two latest pictures, the George Fitzmaurice production "Tarnish" and "In Hollywood with Potash and Perlmutter." His stay in New York will be indefinite and he may be addressed at 383 Madison Avenue

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WEST POINT HELPS BARTHELMESS

The West Point and army atmosphere in Richard Barthelmess' new Inspiration picture for First National release, "Classmates," is going to be strictly accurate if the West Point authorities know the atmosphere of the place.

They have placed the entire resources of the Academy at the disposal of Mr. Barthelmess and his director, John S. Robertson. The Superintendent has detailed the Adjutant of the institution

The Vamp and her 'bosses'—Betty Blythe, George Sidney and Alex Carr, in First National's "Potash and Perlmutter."

to oversee the military details of the production.

Not only was the Adjutant with the company while it was taking the West Point sequences on the company's two trips to the Academy, but he was given leave of absence to come to New York and be present while the more intimate West Point sequences, interiors, scenes within and just outside the tents in which the cadets live during the summer time, were being photographed.

"The Military Academy is backing the production with all its might and main," said the Adjutant when interviewed, "in order that the West Point atmosphere may be entirely correct. Not only was I detailed to work with Mr. Barthelmess, Mr. Robertson and their technical staff on behalf of the Academy, but the continuity was carefully studied and suggestions made which corrected some of the military details that were somewhat in error. The completed photoplay is going to be true to West Point and army life and a most engrossing entertainment besides."

* * *

ROTHSTEIN PLANS BIG STUNTS

Nat G. Rothstein, director of publicity, advertising and exploitation at I B. O. is planning an unusually extensive, high-powered exploitation campaign in connection with "Life's Greatest Game," Emory Johnson's latest production for release through that com pany.

"Life's Greatest Game" will be exploited on a larger scale than were "In the Name of the Law," "The Third Alarm," "Westbound Limited," "The Mailman" and "The Spirit of the U. S. A."

"Life's Greatest Game" will be dedicated to the Baseball League of each city in which it is shown, thus assuring the exhibitor of co-operation and help from all baseball fans when the production is booked.

Babe Ruth has promised his services in connection with exploiting the picture, while many tie-ups have already been affected. One of the "stunts" Nat Rothstein is contemplating is a huge baseball, fully six feet in diameter, which will be inscribed by prominent baseball officials, to be rolled from Los Angeles to New York, which will take in all the key cities en route.

"Life's Greatest Game" will have a Broadway showing at B. S. Moss' Cameo Theatre, where it will open shortly for an extended engagement.

Vitagraph gives life to a real story in "The Clean Heart," in which they have starred Percy Marmont and Marguerite de la Motte, in a quaint setting of England.

Metro-Goldwyn Studios Show Great Activity

Nine Companies at Work at the Studio, and Two Producing Units Busy Abroad

WITH LOIUS B. MAYER vice-president in charge of production operations, production work at the Metro-Goldwyn-Mayer Studio is swinging along at a rapid, healthy pace. Between preparing cutting and actual shooting nine companies are now at work at the studio, and two companies are working on pictures in Europe.

That the fall season is going to be an exceptionally busy one at the Culver City plant is evidenced by the fact that deals have been consummated recently for the purchase of a number of new books and plays, with negotiations for further film material under way in New York.

In his announcement of the vehicles for immediate production, Mr. Mayer said: "Irving G. Thalberg is in daily conference with Erich von Stroheim regarding the making of "The Merry Widow" with Mae Murray as the star. Shooting will be started as soon as the script is ready and the perfect artist has been found for the role of Danilo.

"Mr. Thalberg has selected 'The Wife of the Centaur' by Cyril Hume for King Vidor's next production and is now working with the director on the casting with a view of getting the picture started the first of next week.

"Harry Rapf is busy on a series of productions which will be started in the very near future. Among the first of these will be 'The Summons' by Catherine Newlin Burt, with Robert G. Vignola directing, and 'The Square Peg,' by Lewis Beach which Hobart Henley will make.

"As Robert Z. Leonard's next picture, he has chosen 'Cheaper to Marry,' an adaptation of Samuel Shipman's play. the screen version of which is now being written.

"Among the pictures being made ready for presentation are: Elinor Glyn's 'His Hour,' directed by King Vidor and now being titled by the author: 'Mrs. Paramor,' by Louis Joseph Vance, which Robert C. Vignola directed and is cutting: 'One Night in Rome,' made by Clarence Badger with Laurette Taylor as the star: 'Circe the Enchantress,' a Mae Murray production directed by Robert Z. Leonard: 'He Who Gets Slapped,' recently completed by Victor Seastrom and now being edited; and 'The Silent Accuser,' an unusual picture with a police dog, Peter the Great, as one of the principal features. It was directed by Chester Franklin.

"The excellent progress being made on 'The Great Divide' promises to make that picture even exceed the high standard we had set for it

"Monta Bell has just completed 'The Snob,' based on Helen Martin's novel, and is now busy on the cutting and titling

"We have two companies working at present in Europe. Marshall Nielan's unit is one with London as its background. He is making 'The Sporting Venus,' from a story of Gerald Beaumont. The production of 'Ben Hur' is going forward steadily in Rome under Fred Niblo's direction. May McAvoy has just been engaged for the important role of Esther and will leave for abroad shortly."

* * *

OTTAWA HAS LARGEST PICTURE THEATRE

The City of Ottawa has one of the largest and most unique moving picture palaces in the whole world, this being the large new Auditorium of the Canadian Capital, seating 11,000 persons. The big structure has been adapted for the presentation of pictures and a series of outstanding attractions has been booked almost continuously for coming months, the first production, "Dorothy Vernon of Haddon Hall," starring Mary Pickford, playing an engagement of one week starting September 22.

Several unusual features in connection with the Auditorium presentations is that music is provided by the regimental band of The Governor General's Foot Guards, Ottawa, under the direction of Lieut. J. T. Brown, conductor. Musical scores for the pictures are being used by this military band which, is one of the best in Canada, has a personnel of 52 musicians. Another interesting fact is that only one performance is held daily, this being the one evening show which starts at 8:30 o'clock. Prices of admission do not range as high as the admission charges for the same features in other cities, the idea being that the immense seating capacity in the Ottawa structure justifies a popular price sale.

* * *

METRO-GOLDWYN HAS NEW HOUSE ORGAN

The Metro-Goldwyn "Loew-Down," new house organ of the Metro-Goldwyn-Mayer organization has made its initial appearance with the September issue. Printed in two colors, and attractively made up, the Loew Down is devoted to the interests of every unit concerned in the production and distribution of Metro-Goldwyn pictures.

The current issue contains a portrait of Marcus Loew upon the cover, and it is profusely illustrated. R. W. Baremore, assistant to J. E. D. Meador, is editor of the new publication, which will be issued semi-monthly.

"Tea for Seven," should be the title of this snapshot—Robert Vignola, Director for Metro-Goldwyn-Mayer, entertains at tea Mme. Ten Katsu, and her troupe of Japanese girl dancers. Mr. Vignola has completed his latest production, "Mrs. Paramor."

Buster Keaton, saying it with flowers presents a corsage of expensive posies to Kathrine McGuire, in "The Navigator," a Metro-Goldwyn-Mayer production.

LABOR UNION HALTS THEATRE OPERATION

In two places, at least, in New York State trouble developed during the past week between owners of motion picture theatres and members of unions.

The more serious situation was in Oswego where differences between the Shine interests, operating four houses in that city and representatives of the Union resulted in the houses being picketed during the fore part of the week.

While the trouble is said to have had its inception over wages to be paid a stage carpenter at the Richardson theatre, one of the Shine houses, it also involved the motion picture operators.

Different wages have been paid the operators in the houses in Oswego, wages running from $25 to $35 a week. The Union, it is said, demanded the same rate at all houses. It is expected that the trouble will be adjusted without any great delay.

In Syracuse the trouble came about through demands on the part of musicians in the motion picture theatres for more money. The two factions reached an agreement a week or so ago, however, each conceding certain things

It was supposed that everything had been smoothed out, but some of the theatres balked at signing the agreement, saying that it had been the understanding that the agreement was to run for two years rather than one.

Things became so acute last Sunday that the orchestras were summarily withdrawn from two of the theatres in the city, and now the men are wondering to whom they are to look for their pay for Sunday's work. The question of the length of the agreement was threshed out during the week and finally settled, the wage and working agreements being signed by all parties concerned on Thursday.

* * *

EXHIBITOR ARRANGES UNUSUAL OCT. BOOKINGS

Fred C. Quimby, sales manager of short product for Umversal who is director of the Universal-Lichtman Month Sales Drive being conducted by Universal as a tribute to the work of Al Lichtman, sales manager for that concern, reports that the Regent Theatre of Newcastle, Pa., has come through with exfraordinary Universal bookings for Lichtman Month, giving twenty-two out of twenty-six playdates to that firm's pictures.

Among the pictures which the Regent will show during October (Lichtman Month) are "The Hunchback of Notre Dame," "Wine," "The Night Message," "Broadway or Bust," "The Turmoil," "The Dancing Cheat," six Century Comedies and two of the Jack-Dempsey "Fight and Win" series

Quimby also reports that many other exhibitors are considering unusual bookings of Universal pictures during October, as an appreciate of the "fair play" dealings accorded to them by Al Lichtman

* * *

CECIL B. DEMILLE TO FILM 'THE GOLDEN BED'

Cecil B. DeMille has returned to Hollywood to start preparation on his new Paramount picture "The Golden Bed."

The novel by Wallace Irwin has been prepared as a screen play by Jeanie Macpherson.

SUCCESSFUL RUN OF 'CAPT. BLOOD' CONTINUES

The triumph already achieved by "Captain Blood" in New York and Chicago was repeated in Los Angeles last Saturday, when the super-special picturizing the Rafael Sabatini novel opened its western premiere run at the Rialto Theatre.

Reports from the motion picture capital state that a packed house acclaimed the picture at the opening showing and that large audiences, always enthusiastic, have continued the rule throughout the week. The newspaper reviewers, too, joined in a unanimous chorus of approval.

With this engagement in progress, "Captain Blood" is an outstanding attraction in the East, the Middle West, and in California, at the three centers regarded as of greatest import to exhibitors. The world premiere at the Astor Theatre, New York, is now closing its third week, while the Chicago run, at Jones, Linick & Schaefer's Orpheum, on State street, is concluding its second. In each of these cities the picture was off to an extraordinary start, with the theatre crowded and critics declaring it one of the screen sensations of the year.

Officials of Vitagraph are jubilant over the returns from Los Angeles, which coupled with the experiences in the East and Middle West, appear to "make it unanimous." The first public "make it unanimous." The Rialto ranks high among Los Angeles picture houses of the first class, with a reputation for exhibiting only offerings of the finest quality.

* * *

'FOLLIES GIRL' IS 'CHORUS LADY'

For some unaccountable reason possibly as a surprise for the exhibitors —the Regal Pictures Corporation now announces that the first starring vehicle for Margaret Livingston, heretofore called "The Follies Girl," is the famous James Forbes play "The Chorus Lady" in which Rose Stahl created a furore on the New York speaking stage.

"The Chorus Lady" has been listed for release by Producers Distributing Corporation and is now in production at the Thos. H. Ince studio under the working title of "The Follies Girl." Ralph Ince is directing with Alan Roscoe, Virginia Lee Corbin, Lloyd Ingraham, Lillian Elliott, Philo McCullough, Mervyn Leroy and Eve Southern in the supporting cast.

The film rights were purchased from Famous Players by Regal Pictures, Inc., and now that the masquerading title of "The Follies Girl" has been removed, the screen will shortly see a new picturization of this famous story of New York theatrical life under its original title of "The Chorus Lady."

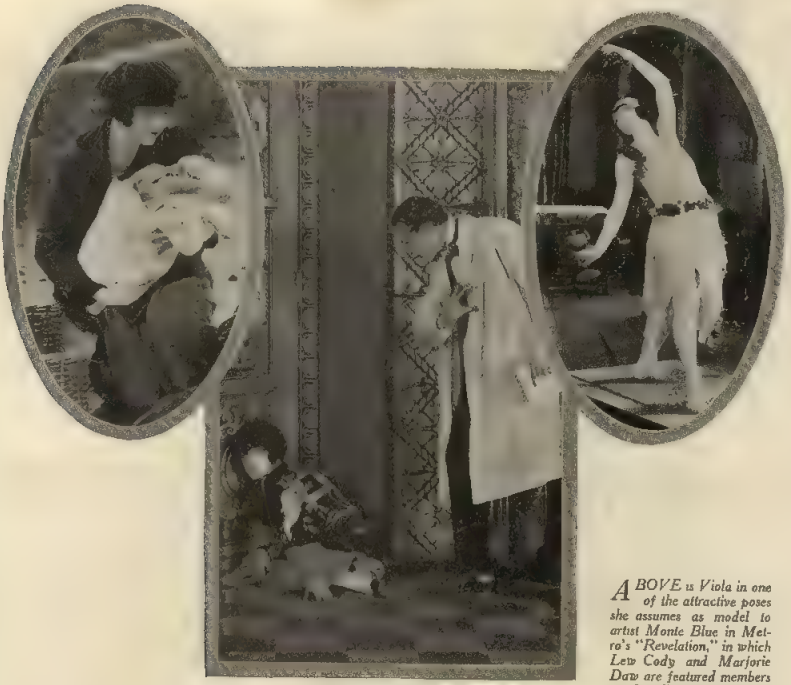
~ look !
~ at this section!
~ next week !

for the flock of money making window dis-plays on screen's greatest picture of *Real American Life* ~

FRANK LLOYD PRODUCTIONS INC.
presents
The SILENT WATCHER
with
GLENN HUNTER BESSIE LOVE
HOBART BOSWORTH
Adapted from MARY ROBERTS RIENHART'S "THE ALTAR ON THE HILL"
Directed by FRANK LLOYD

FIRST NATIONAL PICTURES

A First National Picture



ABOVE is Viola in one of the attractive poses she assumes as model to artist Monte Blue in Metro's "Revelation," in which Lew Cody and Marjorie Daw are featured members of the all star cast. And in the circle below is Viola posing as a Madonna. She looks quite different from the wild little model of the Montmatre studios.

MONTE BLUE is an artist — you can tell that by his smock—and Viola Dana is his model. Joline, who seems to be in for a rough time. This is one of the exciting incidents in Metro's "Revelation." In the oval above Viola is caring for a destitute infant, a bit which arouses real heart interest.

All Star Aggregation in Metro's "Revelation"

In the photoplay adaptation of "The Rosebush of a Thousand Years," Viola Dana, Monte Blue, Marjorie Daw and Lew Cody are featured players.

Yale University Press

presents

"Alexander Hamilton"

One of the Chronicles of America Series

Bootlegging over 100 years ago!

Did you know that bootlegging and consequent rioting [illegible] ered our Government over 100 years ago?

Did you know that it made [illegible] so grave that troops had to be called out?

Did you now that it was Alexander Hamilton, the greatest financial genius of our history, who rescued our country from bankruptcy, and that it was one of his taxation measures that caused the bootlegging, the rioting and the rebellion?

That's the fascinating story of this picture, dramatic, true, authentic, novel, *real!*

Pathé Distributors

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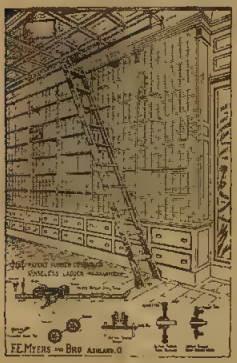


Ladder and Trolley—Complete (Any Length Ladder).
.....Each $29 00

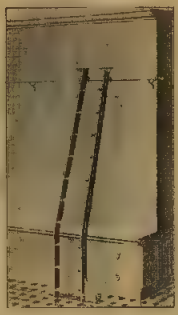
Track—With Hangers, complete.....Foot .40

Double-angle steel track; varnished Georgia pine ladder. 12 in. wide; open panel sides, 6 in. wide; 5-in. steps, malleable iron trolley, self-adjusting; 3-in. anti-rattler wheels, rubber tires; floor travelers, 6 in. diameter, with rubber cushion tires.

Measurement Blanks furnished and prices quoted on application.

In ordering, give the exact height of the ceiling and length of each track. If the height of the ceiling varies, give the height of ceiling at each end and center of each run of track. To ascertain the length of the ladder required, subtract from height of the room 11 inches and multiply the remainder by one and one-tenth.

BICYCLE



Bent, for Floor—Equipped With Iron Wheels

Made of oak or yellow pine, natural finish, with japanned or nickel-plated mountings. Noiseless steel track on floor supports the entire weight of ladder and operator, relieving all liability of ladder falling. Turned pole at top guides the upper end of ladder in moving it. Top of ladder has two hooks which fit over the pole, preventing it from tipping backward. Fitted with extra-wide top shelf for convenience in handling stock.

All Length Ladders to 10 Feet, Same Price

Ladders Over 10 Feet, Add $1.00 Per Foot

No. 1-PJ—Yellow Pine, Japanned Trim..	Each	$17 00
No. 1-PNP—Yellow Pine, Nickel-Plated Trim.	Each	18.00
No. 10-J—Oak, Japanned Trim	Each	20.00
No. 10-NP—Oak, Nickel-Plated Trim . . .	Each	22.00
Track—Japanned Trim, Noiseless.	Foot	.35
Track—Nickel Plated, Noiseless.....	Foot	.40

Track quoted includes rail for bottom of ladder and guide pole for top complete with all necessary brackets, screws and pole ends.

Store Ladders F. O. B. factory only. Rules for measurements sent on application.

STEP LADDERS

KEYSTONE UTILITY STOOLS

Made of first quality material, varnished, well braced and substantial. Top of hardwood. Will fold into small space.

No. 10—Height from floor, 24 in.....Dozen $24.80

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New and Relaying Rails; New and Used Track Equipment, Portable Track, Locomotives, Mine Cars, Frogs, Switches, Turnouts, Switchpoints, Turntables, Spikes and Bolts, Trolley Wire, Bridges.

In Stock Ready for Shipment

NEW RAILS—12 lb., 16 lb., 20 lb., 25 lb., 30 lb., 35 lb., 40 lb., 45 lb., 50 lb., 55 lb., 60 lb., 70 lb., 85 lb., 100 lb. sections, always on hand with bars to match.

RELAYING RAILS—110 tons, 20 lb.; 200 tons, 30 lb.; 400 tons, 40 lb.; 1,200 tons, 60 lb.; 1,000 tons, 70 lb.; 1,400 tons, 85 lb.; 900 tons, 90 lb.; 400 tons, 100 lb. Splice and Angle Bars to match.

Locomotives

Freight and Industrial locomotives, up to 70 tons, all gauges, fit for switching purposes and general haulage.

Trolley Wire

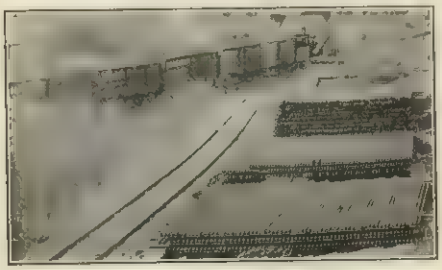
Several miles of 4-0 and 2-0 grooved trolley wire, second hand, in first class condition. Immediate shipment.

Bridges

Assortment of various lengths in either Through Plate or Deck Plate Girders and I Beams.

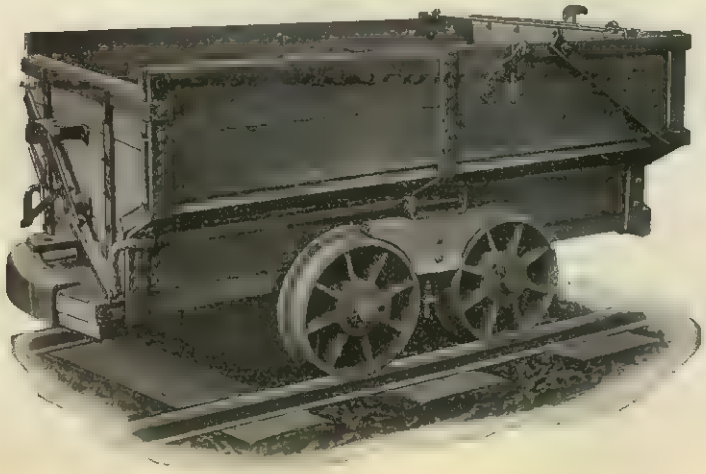
Overhead Trusses.

Spikes and Bolts. Frogs and Switches.



View of Our Storage Yard

Section of Bridge



Complete Turnouts and Single Frogs.

Switch Points for any section of rail.

Portable Track

Immediate deliveries. Any desired length.

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Can supply your needs.

Mine Cars

A newly equipped plant for making Mine Cars to your own specifications.

A number of new Mine Cars of standard specifications, 36″ and 42″ gauge track, always on hand for immediate shipment.

Also a number of second hand, good, serviceable Mine Cars, various specifications and gauges, carried in stock.

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NATIONAL CARBIDE FOR MINERS' LAMPS

Is the Carbide which gives the maximum amount of LIGHT PER POUND—therefore it is the most economical, because in the purchase of Carbide you are really buying light by weight.

This is the Result of—

The use and proper fusing of the purest raw materials, in the most scientific manner, under expert engineering supervision.

NATIONAL CARBIDE owns deposits of the highest grade limestone situated at its plant. It is also in the midst of the great coke producing coal fields of West Virginia, Virginia and Southeastern Kentucky, from which is obtained some of the best coke in the United States. The plant is within a mile of the source of ample hydro-electric power.

Production in the most modern Carbide Plant in the United States assures careful selection, screening and sizing of the best gas producing material obtainable.

NATIONAL CARBIDE containers are made of carefully selected steel parts, put together in the most substantial manner to insure the highest degree of protection for the Carbide in shipping and handling.

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100 pound sheet steel drums, with screw caps. (and additional outer seals).

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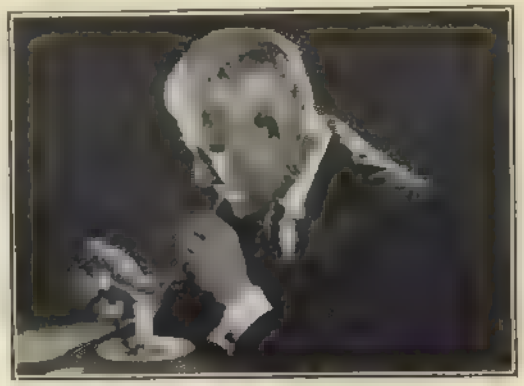
10 pound cans— 6 cans to the case.

2 pound cans—24 cans to the case.

Ask For The Red Drum.

Sold Everywhere.
Warehouses in All Principal Cities.



Anyone can make this simple blowpipe test to determine the purity of white-lead

How you can test white-lead

HOW do you know the white-lead you sell is *pure* white-lead? You can easily tell. Here is a simple test that you can make in your own store.

White lead is made from pure metallic lead by corrosion. If the white-lead which you sell is absolutely pure, you can quickly change it back to its original state —metallic lead—by subjecting it to the blowpipe test. If, on the other hand, the white-lead is not pure, it will not change completely and cleanly to a lead globule, but will leave a slag of the adulterants

This interesting and conclusive test requires only four things:

1—A bit of white-lead, the size of a small pea
2—A flame from a candle, gas jet or alcohol lamp
3— A blowpipe.
4 A piece of charcoal to hold the white-lead while the test is made.

You will find this test both instructive and profitable. And you can easily make it yourself. We will gladly send you the blowpipe, the piece of charcoal, and samples of pure white-lead and adulterated white-lead.

Test both the pure and the adulterated white-lead. Compare the results. Then test the white-lead you are now selling.

If it is Dutch Boy white-lead, the heat of the blowpipe flame will quickly reduce it to its original state of metallic lead. This proves beyond question the purity of Dutch Boy white-lead. It tells you why Dutch Boy white-lead is regarded everywhere as the standard paint to save the surface.

Write on your letterhead to the address below. It will bring you free of charge the complete Dutch Boy testing set.

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New York, 111 Broadway; Boston, 13 State St.; Buffalo, 116 Oak St.; Chicago, 900 West 18th St.; Cincinnati, 659 Freeman Ave.; Cleveland, 820 West Superior Ave.; St. Louis, 722 Chestnut St.; San Francisco, 48 [illegible] St.; Pittsburg, National [illegible] 1316; John [illegible]; Philadelphia, John T. Lewis & Bros. Co., 437 Market St.

LIVE LOVE AND LAUGH

"Never Say Die"

The Above Window Cards in Colors with Gold Stripe Are Easily Adapted to a Tie-Up Display. Simply Insert Douglas McLean's Head in Place of the Present Figures. Plenty of Hat "Stills" Available

Doug's Hats Make Logical Link Between Dealer and Exhibitor

YOUR audience will understand "there's a reason" for this tie-up as soon as they stop and glance at a few of the "Never Say Die" stills which you will use in the window display. But they will understand it far better when they see the picture at your theatre. And you can safely tell them that in advance on a special window card. Doug is very particular about his headgear. So is his valet. That makes this YOUR opportunity as well as OURS. We urge you to notify Exhibitors Trade Review just as soon as you book this picture so we may help our dealer co-operate with you.

Frank Katz Hat Co.
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Society Club Hats
For Young Men

Frank Katz Hat Co.
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LIVE LOVE AND LAUGH "Never Say Die"

Never Say "Dye"—

SAY "RIT"

"Guaranteed to Dye All Fabrics. Washes As It Dyes. No Boiling." A Tie-up with the Douglas MacLean Picture, "Never Say Die," That Cannot Possibly Be Equalled in Exploitation.

EXHIBITORS TRADE REVIEW,
45 W. 45th Street,
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Please get in touch with me and advise how I can take advantage of the national tie-up between the popular dye, RIT, and "Never Say Die." I have listed herewith my play dates and the numbers of tie-ups I would like to arrange.

Name

Theatre

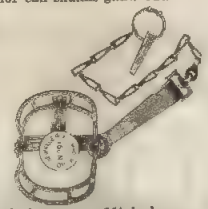
Town State

"Never Say Die" Play Dates No. of Tie-Ups Desired

GAME TRAPS

Double Jaw.

Newhouse double jaw traps are the best traps made for muskrat, skunk, mink, raccoon, fox or woodchuck. Muskrat cannot twist out nor can skunks gnaw out.



No. 91 — Newhouse, double jaw, opens 5⅛ inches, diameter of pan 1⅝ inches, length of trap 8⅛ inches, length of chain 19⅜ inches, 30 dozen in a barrel. Weight, per dozen, 10⅛ pounds. Per dozen $12.00

No. 91½—Newhouse, double jaw, opens 6⅛ inches, diameter of pan 2⅛ inches, length of trap 9⅝ inches, length of chain 22 inches, 20 dozen in a barrel. Weight, per dozen, 16⅝ pounds. Per dozen $20.00

Genuine Newhouse. Double Spring, with Chain.

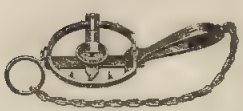
No. 2N—Genuine Newhouse for fox, raccoon, fisher, wildcat, opossum, etc., spread of jaw 4⅝ inches, diameter of pan 2½ inches length of trap 14⅝ inches, length of chain 22 inches. Weight, per dozen, 17⅞ pounds. Per dozen $24.00

Genuine Newhouse, for otter, lynx, coyote, fisher, wildcat, beaver, badger, etc., spread of jaws 5⅝ inches, diameter of pan 2½ inches, length of trap 17 inches, length of chain 26 inches.

No. 3N—Weight, per dozen, 28⅜ pounds. Per dozen $30.00

10 dozen in a barrel.

Single Spring, with Chain.



Genuine Newhouse, for otter, beaver, etc., with 26-inch chain, spread of jaws 5½ inches, diameter of pan 2⅜ in., length of trap 11 inches.

No. 2½N—Weight, per dozen, 25⅞ pounds. Per dozen $38.00

12 dozen in a barrel.

No. 4N—Genuine Newhouse, for beaver, wolf, otter, lynx, cougar, wolverine, etc., spread of jaws 6⅝ inches, diameter of pan 2¾ inches, length of trap 19 inches, length of chain 26 inches. Weight, per dozen, 38¼ pounds. Per dozen $38.00

7 dozen in a barrel.

Genuine Newhouse, for deer, beaver, otter, etc., with offset jaws and teeth, spread of jaws 6⅝ inches, diameter of pan 2⅝ inches, length of trap 19 inches, length of chain 26 inches.

No. 14N—Weight, per dozen, 40 pounds. Per dozen $40.00

7 dozen in a barrel.

Genuine Newhouse, for large wolf, cougar, panther, etc., 45-inch chain and heavy snap, pronged drag, spread of jaws 8¾ inches, diameter of pan 3¼ in., length of trap 23¾ inches.

No. 4½N—Weight, per dozen, 92 pounds. Per dozen $100.00

3 dozen in a barrel.

Genuine Newhouse, for black bear, brown bear, etc., 18-inch chain, spread of jaws 11¾ inches, diameter of pan 4 inches, length of trap 34½ inches, weight 19½ pounds each.

No. 5N—Weight, per dozen, 234 pounds. Per dozen $300.00

One dozen in a barrel.

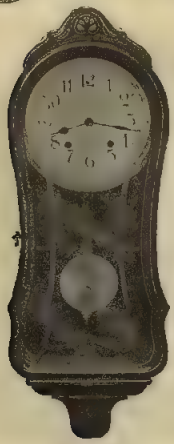
Genuine Newhouse, for grizzly bear, lions, tigers, etc., with 23-inch chain spread of jaws 16 inches, diameter of pan 5⅞ inches, length of trap 44½ inches.

No. 6N—Weight 48½ pounds each; 522 pounds per dozen. Per dozen $600.00

One-third dozen in a barrel.

Reliable and Accurate New Haven Hall, Library, and Never-Wind Clocks

NEW AND ARTISTIC PATTERNS WHICH ARE WELL MADE AND ELEGANTLY FINISHED. SECURELY BOXED, INSURING SAFE SHIPMENT. PRICES EACH.



JULIAN CLOCK

Height, 21 inches; width, 7½ inches; dial, silver finish 6 inches; case, mahogany finish; movement 8-day half-hour strike cathedral gong.

No. 1846 Each $36 10

NEVER-WIND CLOCK

THE CARE FREE CLOCK

Process time keeping without treasure winding. This sensational clock is never wound. Without exercise and it runs from year's end to year's end as faithfully as the sun rises. The motive power is furnished by a powerful little electric dry cell battery hidden in the base. Each battery is guaranteed for one year and usually lasts longer. It is a standard size and can be replaced anywhere. Money could not make a better clock. And it is an ornament of great beauty. The frame is plated with real gold and will never tarnish. Never-Wind is 11 inches high, 7 inches across the base, 4½ inches deep. You simply put a new battery as easily as you do in a pocket flashlight. It is a clock of unbroken timekeeping accuracy.

No. 5V3000 Never-Wind Clock, each $24.00

REGULATOR CLOCK

Height, 32½ inches; width, 17½ inches; dial, 12 inches; movement 8-day time; solid golden oak.

No. 1847 Each $18.85

MIRADA CLOCK

Height, 28½ inches; width, 12 inches; dial, silver finish 8 inches. Case, mahogany finish, beveled glass. Movement, 8-day half-hour strike, cathedral gong.

No. 1848 Mahogany, each $25 00

MARINO CLOCK

Height, 26 inches; width, 11 inches; dial, silver finish, 8 inches. Case, mahogany finish, beveled glass. Movement, 8-day half-hour strike, cathedral gong.

No. 1849 Mahogany, each $26.85

SATURN CLOCK

Height, 33½ inches; width, 15¼ inches; [illegible]. Case, solid golden oak or mahogany. Movement [illegible] 8-day strike gong; 30-day time or 8-day [illegible] weight with retaining power.

Mahogany

No. 1860	8-day time, each	$28 25
No. 1861	8-day strike gong, each	30 45
No. 1862	30-day time, each	32 60
No. 1863	8-day time weight with retaining power, each	41 35

Same as above in Golden Oak

No. 1864	8-day time, each	$28 25
No. 1865	8-day strike gong, each	30 45
No. 1866	30-day time, each	32 60
No. 1867	8-day time weight with retaining power, each	41 35

Highest Grade Imported Westminster Chime Mantel Clocks

The most wonderful Chimes ever heard—Resonant, Impressive and Captivating. Eight-day full Westminster Quarter-hour Chime strike. Solid genuine Mahogany Cabinets.

Chimes can be silenced at will.

AN HEIRLOOM, BRIDAL OR ANNIVERSARY GIFT.

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GUARANTEED ACCURATE TIMEKEEPERS REMARKABLY WELL CONSTRUCTED, ELEGANTLY FINISHED AND MARVELOUSLY RICH APPEARING

THE DIALS ARE VERY ATTRACTIVE AND THE NUMERALS ARE CLEARLY DEFINED. ANY DESIGN WILL ADD GRACE AND CHARM TO THE LIVING ROOM. CLOCKS OF THE HIGHER GRADE FOR THE "BETTER HOMES"

MONTANA, WESTMINSTER CHIME MANTEL CLOCK

Solid genuine Mahogany case. Height, 14 inches; width, 10 inches. Richly etched gold or silver-plated dial, 9x7 inches. Raised [illegible] Bevel glass door. "Booker" movement, 5 staffs all through steel cut pinions. Eight-day Full Westminster Quarter-hour Chime strike.

No. 518G	Gold-Plated Dial, each	**$104.50**
No. 518S	Silver-Plated Dial, each	**104.50**

OHIO, WESTMINSTER CHIME MANTEL CLOCK

A new creation just imported which possesses surpassing individuality. Has gained utmost admiration wherever shown. Genuine Solid Mahogany Domestic (hand made) Cabinet. Height, 12½ inches. Width, 9 inches. Fitted with the celebrated "Booker" Movement 5 staffs all through steel cut pinions. Eight-day Full Westminster Quarter-hour Chime strike. Silver dial. Clearly defined numerals. Beveled Glass. Especially priced in this setting.

No. 169	Ohio Westminster Chime Mantel Clock, each	**$110.00**

KLONDIKE, WESTMINSTER CHIME MANTEL CLOCK

Solid genuine Mahogany case. Height, 16 inches; width, 12½ inches. Richly etched gold or silver-plated dial, 9x7 inches. Raised [illegible] Bevel glass door. "Booker" movement, 5 staffs all through steel cut pinions. Eight-day Full Westminster Quarter-hour Chime strike.

No. 516	Each	**$110.00**

TALENT, WESTMINSTER CHIME MANTEL CLOCK
GENUINE MAHOGANY DOMESTIC CASE

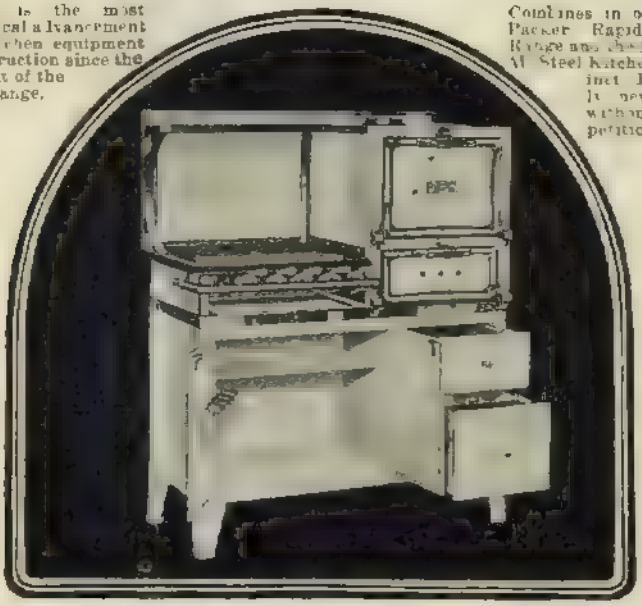
Height, 16 inches; width, 12½ inches. Richly etched gold or silver-plated dial, 9x7 inches. Raised [illegible] Bevel glass door. "Booker" Movement, 5 staffs all through steel cut pinions. Eight-day Full Westminster Quarter-hour Chime strike.

No. 2004G	Gold Plated Dial, each	**$142.00**
No. 2004S	Silver-Plated Dial, each	**143.00**

The New KAB-RANGE

Here is the most practical advancement in kitchen equipment construction since the advent of the gas range.

Combines in one the Packer Rapid Fire Range and the Packer All Steel Kitchen Cabinet. Entirely new and without competition



Write or Wire Us Immediately

Kab Range gives in one all the advantages of range and cabinet in the space usually occupied by either. The modern housewife demands the cabinet range but the Kab Range goes it a point better and utilizes the heretofore wasted space beneath. It was designed primarily to meet the requirements of the modern small kitchen.

Not only does the Kab-Range outsell in the present market for high grade ranges—but it opens the door to an entirely new market, the consumer who has ever on the lookout for the new beautiful and practical.

Built by PACKER

Knowing the possibilities that await the Kab-Range, we have priced it on a quantity production basis. In fact it sells to the trade for very little more than the cost of the ordinary range.

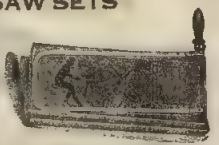
We are not over enthusiastic. We know what it will do. We know the demand is going to tax our production capacity. Therefore, we advise IMMEDIATE ORDERING. Write us at once or mail this advertisement today with your letterhead for complete information and prices.

THE OHIO STATE STOVE & MFG. CO.

Main Office and Factory Columbus, Ohio

New York Office and Display—30-32 East 20th Street

FRET SAW SETS



Rough nickeled spring steel frame, 12x5 inches; japanned iron handle, patent clamps.

No. 1—Complete with 1 frame, 12 saw blades, 1 awl, 1 sheet of impression paper and 3 sheets of designs. Wt., per doz., 10½ lbs. Per dozen ..$15.00

No. 2—With superior spring steel frame, polished and nickeled, 12x5 inches; rosewood handle; patent clamps. Same accessories furnished as with No. 1 set. Weight, per dozen, 13 pounds. Per dozen $21.00

One set in a box.

FRET SAWS

New Rogers.

Iron castings, japanned black with red and gilt stripes; steel arbors; arms and pitman of best selected ash wood; bearings to the arms carefully adjusted; automatic dust blower; jointed stretcher rod, permitting free action of arms; adjustable lever saw clamps; drilling attachment on right-hand side of balance wheel; height, 35 inches. Each machine complete with 12 saw blades, 1 wrench, 3 sheets of designs, 1 awl, impression paper and 3 drill points.

No. 2NR—With nickel tilting table & emery balance wheel. Each..$15.00

Net weight, 28 pounds; boxed, 45 pounds. One in a wooden box, K. D.

LATHE AND SAWS

Millers Falls.

This lathe lead has a 2-inch face plate and spur center and screw center for turning cups. Tail stock has screw feed and can be clamped at any point. Drill spindle with chuck for drill points for woodboring. The lathe is equipped with long and short tool rests, an emery wheel 4x¾ in., an accurate drill chuck (Star) holding 0 to ¼ inch diameter round shank drills for boring in metal or wood, and five turning tools, wrench and drill points, etc.

‡**No. 317**—Lathe and lathe tools complete; net weight 50 lbs., shipping weight 71 lbs. Each.....$23.50

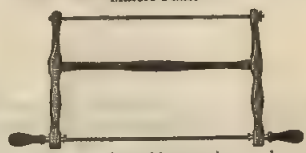
‡**No. 320**—Lathe and Fret Saw Attachm't. Each $64.00

‡**No. 321**—Lathe with Fret and Circular Saw Attachment. Each 67.50

One knocked down and packed in wood box.

TURNING SAWS

Millers Falls.



A serviceable saw for cabinet workers and carpenters in doing irregular work, such as cornice, grills, etc. The friction on the handles is regulated by screws. Ebonized birch handles; steel tension rod. Handles stained. Depth 7½ inches. One blade furnished with each frame.

Nos.	357-14	357-24
Capacity, inches	14	24
Weight, dozen, lbs.	17	22
Per dozen	$21.60	$25.80

One in a box.

Turning Saw Blades.

For use in the above saws.

Length, inches	14	24
Per dozen	$3.50	$5.75

COPING SAWS

F. P. M.

Genuine F. P. M.—Highly finished, cold drawn steel back, 6½-inch blade, 4½ inches between back and blade; 4-inch hardwood handle. Blade can be set at any angle. Weight, per dozen, 6¾ lbs. Per dozen...$10.50

One-third dozen in a box.

Extra Blades for F. P. M. Coping Saws. Dozen....$0.60

One dozen in a bundle.

Nickel plated steel frame and handle, turned ends, two slots for sawing right angles and on mitres.

No. 101 — Coping saw, 6-inch; 4 inches between blade and back; length over all, 10 inches; complete with one dozen blades. Weight per dozen, 4 pounds. Per dozen.....$3.50

Half dozen in a box.

Extra Blades for No. 101 Coping Saws. Per gross..$2.25

Ball Bearing.

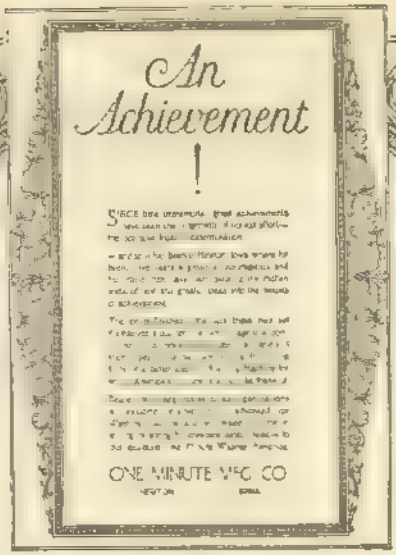
Nickeled heavy steel wire frame; rare tropical wood handle.. Frame may be locked rigid or adjusted to swing free without reference to the direction blade takes in sawing. Devices to lock frame rigid at both ends of blade.

No. 42—Three 6x¾ inch blades with each frame. **Weight, per dozen, 6 pounds. Per dozen.....$12.00**

One-quarter dozen in a box.

No. 60—Millers Falls coping saw blades. Dozen... .40

Items marked thus ‡ not carried in stock. Shipped direct from factory only.



More about that Achievement

—of those men in Newton.

Building Washing Machines for twenty-five consecutive years has given the principals of the One Minute Manufacturing Company many exclusive and advanced ideas relative to construction and operation which are quite apparent in the latest model of the One Minute Washer.

There are seven outstanding features on the One Minute which win instant favor with the housewife—seven reasons why she prefers it to all other machines.

These seven exclusive features give you as a dealer seven chances of making a sale as against one with any other make.

Dealers who have modern and efficient sales organizations are urged to familiarize themselves with the One Minute franchise. Big sales await One Minute dealers.

ONE MINUTE MFG. CO.
Newton Dept. F 4. Iowa

Say you saw it in GOOD HARDWARE

PORTABLE PAL PHONOGRAPH

The Ideal All-Year-'Round Portable Phonograph

A profitable article to handle because:

The **investment** is small—
The **margin** is big—
The **turnover** is quick—and
every time you sell a PAL
you make a friend.

Pal is sturdily built with double-spring motor—compact—11½" wide, 16½" long and 7" high, weighing approximately 16 pounds. Finely finished—covered with Dupont fabrikoid—and wonderful tone quality. Equipped with album which will hold ten 10-inch records.

Whether you sell phonographs or not you can sell PAL.

List $25. Net $15 f.o.b. New York

PLAZA MUSIC CO. 18 West 20th St., New York

PERCOLATORS, Coffee, Alcohol

Buffalo Mfg. Co., 191 Clinton, Buffalo, N. Y.
Robeson-Rochester Corp., Rochester, N. Y. "Royal Rochester"
Royal Rochester—See Robeson-Rochester Corp.

PERCOLATORS, Coffee, Electric

Aluminum Goods Mfg. Co., Manitowoc, Wis.
American Beauty—See American Electrical Heater Co.
American Electric Heater Co., Woodward, Burroughs & Cass Aves., Detroit, Mich. "American Beauty"
Buckeye Aluminum Co., Wooster, O.
Buffalo Mfg. Co., 191 Clinton, Buffalo, N. Y.
Edison Electrical Appliance Co., 5660 Taylor, Chicago, Ill. "Hotpoint."
Electrahot Appliances, 307 5th Av., S., Minneapolis, Minn.
Electro—See Hughes (D. C.) & Co.
Foster, Merriam & Co., Meriden, Conn.
Hotpoint—See Edison Electrical Appliance Co.
Hughes (D.C.) & Co., 4642 Ravenswood Av., Chicago, Ill. "Electro."
Landers, Frary & Clark, New Britain, Conn. "Universal."
Leyse Aluminum Co., Kewaunee, Wis.
Manning-Bowman & Co., Meriden, Conn.
Metal Ware Corp., Two Rivers, Wis. "Pilgrim Ware"
National Stamping & Elec. Wks., 3212 W. Lake, Chicago, Ill. "White Cross"
Pilgrim Ware—See Metal Ware Corp.
Robeson-Rochester Corp., Rochester, N. Y. "Royal Rochester"
Royal Rochester—See Robeson-Rochester Corp.
Silex Co., 48 High., Boston, Mass.
Universal—See Landers, Frary & Clark.
Waage Electric Co., 5100 Ravenswood Av., N. W., Chicago, Ill.
West Bend Aluminum Co., West Bend, Wis.
Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.
White Cross—See National Stamping & Elec. Wks.

PET COCK WRENCHES—See Wrenches, Off Cock

PET COCKS—See Cocks, Pet

PHONES, Head, Radio—See Radio Headsets

PHONOGRAPH ATTACHMENTS, Radio—See Radio Phonograph Attachments

PHONOGRAPH NEEDLES—See Needles, Talking Machine

PHONOGRAPHS

Aeolian Co., 29 W. 42d, New York, N. Y.
Baby Toy—See General Phonograph Mfg. Co.
Bradley (G. E.) Corp., Brattleboro, Vt.
Brunswick-Balke-Collender Co., 623 S. Wabash Av., Chicago, Ill.
Burnham Phonograph Mfg. Co., Los Angeles, Cal.
Charmaphone Co., 39 W. 42d, New York, N. Y.
Columbia Graphophone Co., 1819 Broadway, New York, N. Y. "Dictaphone"
Cook (Ernest C.) Co., 116 S. Michigan Blvd., Chicago, Ill.
Crescent Talking Mach. Co., 7 White, New York, N. Y.
Crosley Radio Corp., Blue Rock St. & B. & O. R. R., Cincinnati, O.
Dictaphone—See Columbia Graphophone Co.
Edison, (Thos. A.) Inc., Orange, N. J.
Electric Phonograph Co., 236 W. 116th, New York, N. Y.
Emerson Phonograph Co., 206 5th Av., New York, N. Y.
Garford Model E—See General Phonograph Mfg. Co.
General Phonograph Mfg. Co., Elyria, O. "Baby Toy," "Garford Model E," "Vanophone"
Koehler & Hinrichs, St. Paul, Minn.
Lorimer Mfg. Co., Troy, O.
McCoy (P. J.) & Co., Ferry St., Newark, N. J. "Orpheus"
Magnola—See Schultz (M.) Co.
Mandel Mfg. Co., 801 S. Laflin, Chicago, Ill.
Milwaukee Talking Mach. Mfg. Co., 241 E. Water, Milwaukee, Wis.
Music Table Co., Greenfield, O.
Natural Voice Talking Mach. Co., Oneida, N. Y.
Novitas Sales Co., Waltham, Mass.
Orpheus—See McCoy (P. J.) & Co.
Onting Talking Mach. Co., Mt. Kisco, N. Y.
Pal Portable—See Plaza Music Co.
Pathe Freres Phono Co., 15 E. 42d, New York, N. Y.
Plaza Music Co., 18 W. 20th, New York, N. Y. "Pal Portable"
★For descriptive data of the above, see index on page 6
Rikadi Phonograph Co., Williamsport, Pa.
Schultz (M.) Co., 711 Milwaukee Av., Chicago, Ill. "Magnola"
Sonora Phonograph Co., 279 Broadway, New York, N. Y.
Stewart Mfg. Corp., 4635 Fullerton Av., Chicago, Ill.
United Phonographic Corp., Sheboygan, Wis.
Vanophone—See General Phonograph Mfg. Co.
Victor Talking Mach. Co., Camden, N. J.
Waser Bros., 524 W. 42d, New York, N. Y.

PANNIER BROTHERS STAMP CO.

207-209 Sandusky Street PITTSBURGH, PA

Manufacturers of

Steel Stamps, Rubber Stamps, Stencils, Checks, Etc.

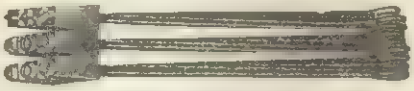
MASTER PANNIER MARKERS

Products

Officers and Employees' Identification Badges; Burning Brands; Miners' Checks; Time, Tool, Trade and Pay Checks; Dies; Tie Inspectors' Hammers; Stencils; Steel Alphabets and Figures; Steel Name or Initial Stamps; Ajax Steel Type Holder; Sunk Letter Number Plates; Special Devices for marking, checking and identifying purposes. Particular attention given to the design and manufacture of dies for unusual purposes.

Burning Brands

PANNIER Burning Brands are made of cast iron with 24 inch handle. The characters are clean cut and deep, insur-



ing good impressions. They are ideally suited for permanently marking mine cars, shovels, picks, mule hoofs and other mine property. Can be furnished with initials only, or as name brands and in figure sets.

Steel Stamps

Every conceivable kind of steel stamps to meet any requirement, from the simplest stock letter or figure to the big-

gest special stamp in regular forging, fullered forging or eye forging styles.

Steel Type Stamp Holder

This Holder is made to meet conditions demanding the very outside limit of strength and durability. It is constructed with a hardened tool steel plate at the base of the letter slot which distributes the force of the blow evenly. Slot and locking device allow sufficient play for the interchangeable stamps to center themselves, thus there is never any strain under even the most severe blows, insuring long, satisfactory service under extremely hard usage. Fine for numbering checks.

Tie Inspectors' Hammer

A big aid to tie inspectors. One end tapered, enabling inspector to turn ties over. Thickness of tie readily determined by scale on side of hammer. Furnished with any desired inscription. Letters cut ⅛ in. deep and made with a broad face, which produces easily read markings.

Rubber Stamps

There are always a thousand and one uses for rubber stamps. We make rubber stamps for every one of these uses. Great time savers for the issuance of fixed orders, notifications, etc. Inks, Pads, Daters, Numbering Machines and similar devices also furnished.

Mine Checks

The PANNIER line includes miners' lamp, powder, dynamite, mine car, and time, tool or pay checks in an almost

No. 11 No. 9 No. N-458 No. N-541

endless variety of shapes. Furnished blank or lettered and numbered as desired.

Identification Badges

It is important to be able to identify at a glance those who have a right on your property.

Brass or Nickel Plated Pin on Back

Lettered and Numbered and Dished

These employes identification badges can be furnished in many different shapes, brass or nickel plated; lettered and numbered as desired, with good, strong pin on back. They are distinctive and readily seen.

No. 856-P

Officers' Badges

We offer a variety of styles in these badges, one of which is illustrated. Furnished with company name, or such wording as Police, Deputy Watchman, Special Officer, etc.; numbered and filled in with black enamel.

Number Plates

Suitable for pigeon holes, drawers, for numbering machinery and for use in supply house or storeroom. Furnished in Liberty silver, brass, plain or nickel plated, with sunk figures filled with black enamel.

H-No. 3

H-No. 6

Raised Letter Trade Checks

For company stores, in any desired denominations; in a variety of shapes, with raised letters stamped on both sides.

Also

We make metal office signs, house numbers, stencils of standard and special designs, and standard alphabet and figure stencils.

Artistic Hand Decorated High Grade Parchment Shades and Complete Lamps

PARCHMENT, AS USED IN THE MANUFACTURE OF LAMP SHADES, IS A SPECIALLY PREPARED PARCHMENTIZED PAPER POSSESSING A HIGH DEGREE OF TRANSLUCENCY AND DURABILITY.

PRACTICAL GIFTS THAT BRING HAPPINESS

THROUGH OUR SECRET PROCESS, BEAUTIFUL AND ARTISTIC MOTTLED AND CLOUDED EFFECTS ARE OBTAINED THROUGH WHICH A SOFT RADIANT LIGHT IS DIFFUSED.

ALL COMPLETE LAMPS ARE FURNISHED WITH CORD AND PLUG.

No. 4P122 19 Boudoir Lamp, each $3.55

No. 4P121 20 Boudoir Lamp each $9.60

No. 4P117/12 Boudoir Lamp, each $11.70

No. 4P112/18 Table Lamp, each..... $18.25

No. 4P118/16 Table Lamp, each.... $21.30

DESCRIPTION AND PRICES OF LAMPS SHOWN HEREIN

No 4P122 19 Boudoir Lamp: This is a splendid inexpensive number that is very rich and attractive. Both wood base and candlestick are hand painted and finished in any coloring desired. Cylinder shade measures 4x6 inches. One light, drop pan, silk cord and plug. Complete lamp each $3 55

No 4P121/20 Boudoir Lamp: Wood base of graceful design with 8-inch parchment shade, gold braided borders. Both stand and shade artistically hand decorated in amber and gold. Complete height, 12 inches. One light push pan, silk cord and plug, complete lamp, each $9.60

No 4P117 12 Boudoir Lamp: Wood base of symmetrical design with 10-inch parchment shade, gold braided borders, decorated in a lovely conventional pattern design. Ivory finish. Complete height 20 inches. One light push pan, silk cord and plug complete lamp, each $11.70

No 4P113,10 Table Lamp: Wood base with 12-inch parchment shade, gold braided borders. Both stand and shade artistically hand decorated in a water lily design, richly finished in deep blue. Complete height, 16½ inches. Two-light pull chain cluster, silk cord and plug, complete lamp, each $19 16

No 4P106,16 Table Lamp Wood base with 18-inch parchment shade, gold braided borders. Both stand and shade beautifully decorated in a butterfly design, brown and gold coloring. Can also furnish this lamp in antique copper silver or gold polychrome (State finish wanted when ordering) Complete height, 23 inches, two-light pull chain cluster, silk cord and plug, complete lamp, each, ... $21 30

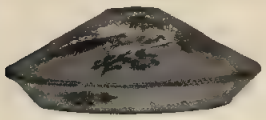
No 4P114 12 Boudoir Lamp. Wood base with 12-inch parchment shade, gold braided borders. Both stand and shade most exquisitely hand decorated in a lovely conventional design and finished in old ivory and antique copper. Complete height, 17 inches. One-light, push pan, silk cord and plug, complete lamp, each $12 80

No. 4P114/12 Boudoir Lamp, each .. $12.80

A SPLENDID OPPORTUNITY IS AFFORDED YOU TO PURCHASE ANY STYLE PARCHMENT SHADE OF ANY OF THE COMPLETE LAMPS SHOWN ABOVE OR ON PRECEDING PAGE
Made in any size wanted—from 4 to 36 inches and decorated by hand in color specified or any color wanted.

If you have the stand and merely wish the parchment decorated shade, make selection of shade wanted from any of the complete lamps illustrated, specifying size wanted and special decoration if so desired and order will command our prompt attention.

PRICED VERY LOW. EXPERT WORKMANSHIP AND FINISH

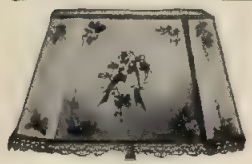


SHADE STYLE 4P21

Concave apron. Finished in any coloring and design. Sizes, 12 to 36 inches. (See price list below.)

SHADE STYLE 4P25

Bird design. Can be finished in any coloring. Sizes, 8 to 18 inches. (See price list below.)



SHADE STYLE 4P104

Octagonal shape. Any design or coloring. Sizes, 8 to 26 inches. (See price list below.)

The above three numbers illustrate Parchment Shades. We can furnish any of the shades shown above or with complete lamps on this and preceding page at following list prices:

Shades as shown with lamps on this and preceding page. Nos. 4P106,18, 4P418/12 4P117/12, 4P108/18 and 4P114 12, are one-piece shades and can be furnished in the following sizes at list prices:

20 inches	$28.70	12 inches	$3.85
24 inches	25.00	14 inches	4.50
26 inches	26.25	16 inches	5.70
28 inches	18.20	18 inches	6.50
30 inches	19.25	8 inches	3.20
32 inches	17.00	8 inches	1.90

Shades above illustrated, Nos. 4P21 4P25 and 4P104, and shades shown with lamps on this and preceding page, Nos. 4P104/20, 4P122 17, 4P418/22 4P418/32 4P121 20 and 4P112 16, are two-piece shades and can be furnished in the following sizes at list prices:

28 inches	$28.80	22 inches	$21.30	14 inches	$11.70
26 inches	26.50	20 inches	19.25	12 inches	8.50
24 inches	25.00	18 inches	16.50	10 inches	5.85
22 inches	22.90	10 inches	14.35	8 inches	3.75

The cylindrical shade, as shown with Boudoir Lamp No. 4P122/19 on this page, can be furnished in any decorations in the following sizes at list prices:

18x14 inches, each	$21.30	10x9 inches, each	$18.65
8x 6 inches, each	4.25	6x4 inches, each	2.15

Highly Finished Polychrome and Antique Bronze Classic Reproductions of Marvelous Beauty

The elegant, the well defined, embossed subjects and the rich finish is wonderful to behold. The product finished in Polychrome, and burnished gold, with genuine Antique Tints, blends into one harmonious color scheme, which is most magnificent. The richness in the character of this high grade line lies in the large quantity of burnished gold used in the decoration. The Antique Bronze finishes are exact copies of the bronzes excavated in Pompeii. During the centuries they were buried beneath the earth these bronzes developed greenish, bluish and golden tints, the beauty of which is beyond comparison. Our finishes cannot be told from the original. As Piano, Table Pedestal or Cabinet Center Pieces they add that final touch of exclusiveness to surroundings, give a sense of individuality and interest. Book Ends, Candlesticks, Busts, etc., make highly prized and acceptable Wedding or Anniversary gifts. You can have the confident assurance the recipient will be highly charmed with the present.

PRACTICAL GIFTS THAT BRING HAPPINESS

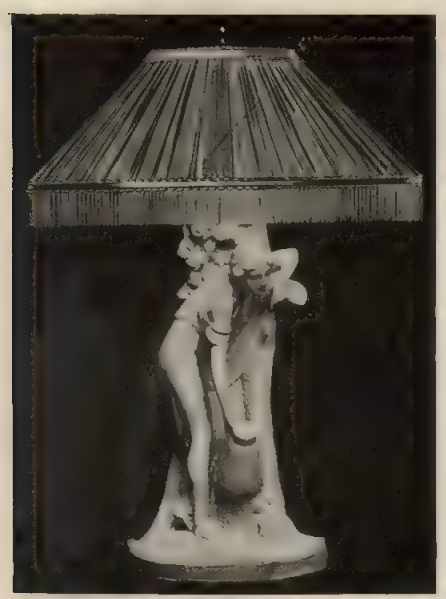


TABLE LAMP REBEKAH AT WELL

These lamps are of an authentic and historical connection in art circles. It is so masterly modeled and the subject so artistically defined that you will be pleased to own its possession. Height over all, 27 inches, shade of silk shade 20 inches, which is furnished in a lovely Rose color. 2-light adjustable cluster, silk cord and two-piece plug. Base finished in a rich Polychrome, which in contrast to the beautiful Rose shade, insures a charming color scheme. Exceedingly low priced.

No. 4T1032L Table Lamp, each ... $43.75

TABLE LAMP GREEK DESIGN

A pattern that is characteristic of eminent Greek decorating. Its life has been preserved for centuries and is correct in its quaintly beautiful style. Height over all, 23 inches. Finished in antique Parchment. Base is a magnificent floral design. Decorated, 20 inches 2-light adjustable cluster, silk cord and two-piece plug. Base finished in a rich Polychrome, contrasting most exquisitely with the predominating colors of sand and parchment shade. This low factory price should merit your consideration.

No. 4T833L Table Lamp, each ... $30.00

ELECTRIC CANDLESTICK

Renaissance style. Height, 12 inches. Finished in Antique Ivory Bronze. Wired and complete with socket and pull chain as shown. Silk cord used.

No. 4T527L Pair. $17.40

CANDLESTICK

Egyptian style. Height, 7 inches. Polychrome finish richly gold burnished.

No. 4T377 Pair ... $8.30

PLAQUE (YOUNG BACCHUS DRINKING)

By Luca Della Robia

This design has caused a craze in every civilized country. It is a reproduction of one of the famous original art productions. Size, 17x24 inches. Terra cotta tone. The foreground of the mass of fruit, foliage and the design in pearl gray, against a cream colored background, blending to the deep tones of the figure in a setting.

No. 4T123 Plaque, each ... $8.00

Lion of Lucerne

Size, 3x6 inches. Antique bronze finish.

No. 4T505 Per pair ... $8.50

BOOK ENDS

The Cave Man

Height, 8 inches. Antique bronze finish.

No. 4T528 Per pair ... $7.00

A feast of laughter for August and September

From

MACK SENNETT

All Two Reel Comedies

1. BEN TURPIN; "Romeo and Juliet"; August 3; if Shakespeare could have seen Turpin in this one he would never have written "Wherefore art thou Romeo?"

2. MACK SENNETT COMEDY; "Wall Street Blues"; Aug. 10; the only blues are in the title

3. HARRY LANGDON; "The First 100 Years"; Aug. 17; Harry hires a cook and finds it easier to hire than fire. A million laughs

4. RALPH GRAVES; (Mack Sennett Star Comedy); "East of the Water Plug"; Aug. 24; a new and good comedian in a travesty on amateur theatricals; showing how tragedy can become a scream

5. MACK SENNETT COMEDY; "Lizzies of the Field"; Sept. 7; as many laughs as there are bolts in a Ford; an automobile race with a great big thrill

6. HARRY LANGDON "The Luck O' the Foolish"; Sept. 14; Harry in a honeymoon that is a howl

7. BEN TURPIN; "Three Foolish Weeks"; Sept. 14

Sennetts for laughter and satisfied audiences

Pathécomedy

TRADE MARK

Identified—

EASTMAN POSITIVE FILM

Even before you see the picture on the screen you know that the release print bearing the identification "Eastman" "Kodak" in the margin is of the finest possible photographic quality.

Eastman Positive Film carries quality from studio to screen.

EASTMAN KODAK COMPANY
ROCHESTER, N. Y.

PEERLESS EXPLOSIVES COMPANY

Incorporated

Offices

Pittsburgh, Pa. Wilkes-Barre, Pa. Bluefield, W. Va.

Manufacturers of

PEERLESS EXPLOSIVES

Permissible Explosives, Dynamite, Blasting Powder and Blasting Supplies

Peerless Explosives were formulated only after years of research and study of the very many factors that govern the safe and economical production of coal. Velocity of detonation, strength, spread of explosive energy, and thoroughness of detonation—all govern the effect on material blasted, and are controlled by the superior and highly standardized methods we employ.

A grade and strength to fit your particular conditions and requirements will be found in the Peerless Assortment.

Permissible Explosives

So named because they have been approved by the U. S. Bureau of Mines for use in gaseous and dusty mines. Our success is indicated, not alone by the ever growing demand for Peerless Permissibles, but by the further fact that many miners insist on them, even in mines where mining laws do not require permissible explosives to be used.

Peerless No. 1—A strong, quick acting explosive, particularly suited to the production of coking coal or shooting coal of very hard texture. It is also used in mines in place of dynamite for rock work. It is low-freezing and averages 300 cartridges 1¼x8 inches per 100 pounds.

Peerless No. 2—The permissible that insures the greatest percentage of lump coal—coal that withstands rough handling and is "lump" when it reaches the consumer. It is low in velocity and of great strength. It has a more spreading and lifting action than Peerless No. 1, and its unusual balance has caused it to be called the nearest thing to black powder yet developed in a permissible explosive.

Dynamite

Efficient preparation of raw materials in process is reflected in the finished product. The most modern and efficient machinery and equipment in use at our plant insures a dependable, uniform quality, so that once the placing of holes and size of charge has been determined, no further experimenting is necessary.

Gelatin Grade

For driving tunnels, sinking shafts and other rock work where fumes are a consideration. A very dense, water resisting explosive. It is low-freezing and is made in strengths from 25% to 100%.

Nitro-Glycerin Grade

Of very quick, concentrated and shattering action. Very effective for outside work in hard-shooting rock. Made both high and low-freezing, and in strengths from 5% to 60%.

Ammonia Grade

Has a great spreading and heaving power, and is particularly adapted to headings, strippings, cuts and all around blasting that is not gaseous. Though not classed as a water-proof explosive, special treatment affords considerable protection when loaded in holes containing moisture. Made in strengths from 15% to 60% and is low-freezing.

Blasting Powder

Recommended for use in mines that are free from gas and coal dust. Made in granulations ranging from CCC, providing a slow, heaving action, to FFFF, which affords a quick, shattering action. Sizes are selected according to local conditions and sizes of coal desired.

The careful selection and standardized preparation of raw materials that enter into Blasting Powder, are responsible for the steadfast demand for Peerless Brand. The bright glaze, causing the powder to be free-running, and the uniformity of grains, which insures uniform blasting, are outstanding features.

Blasting Supplies

In addition to the above products, we carry ample stocks of the following commodities at numerous distributing points located in various sections east of the Mississippi river.

Blasting Caps.
Electric Blasting Caps.
Delay Electric Blasting Caps.
Blasting Machines.
Delay Electric Igniters.
Leading Wire and Cables.
Connecting Wire.
Safety Fuse.
Rheostats.
Galvanometers.
Magazines.
Magazine Locks.
Electric Squibs.
Tamping Bags.

UNITED STATES POWDER CO.

Home Office

Terre Haute Trust Building, TERRE HAUTE IND.

MILLS AT COALMONT AND CLINTON, IND.

Manufacturers of

Union Made Black Blasting Powder

The manufacturers of the United States black blasting powder claim several points of superiority for this brand. That is what every manufacturer does for his particular brand as a rule. Under the circumstances it is rather surprising to know how seldom the purchaser or consumer of black blasting powder makes careful examination or tests with a view of proving or disproving the manufacturer's claims.

In the manufacture of U. S. black blasting powder, the greatest possible care is taken to purchase only the best grades of raw material; to thoroughly incorporate the ingredients during the mixing process; to press these into an extremely hard cake; to glaze each grain with a bright, moisture resisting layer of plumbago; and to finally screen the powder in a careful and systematic manner which insures a grain of uniform size.

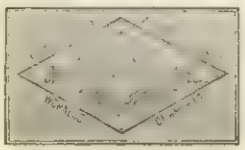
The U. S. Powder Co., has spent a great deal of time and money in standardizing the size of its grain. Taking the Illinois mining laws as an operating standard, this company has for some years turned out the different sizes of black powder with almost the same uniformity as if the grains had been moulded in the same mould. By examining the

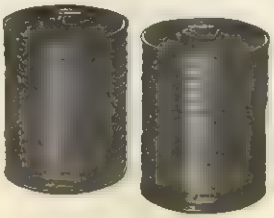
Illustrations Are Actual Size of Grains

picture printed down the center of our page you will be struck immediately by the remarkable uniformity in the grains of powder in each size. This picture is a faithful photographic reproduction of U. S. black powder, actual size, and shows the five standard sizes which are most popular among coal miners.

Not only has the U. S. Powder Co. taken the greatest pains to use the screens which will produce the regular sized grains, but its chemists have periodically made analyses of the different grains of powder in order to check up the factory work and make sure that each grain was of uniform composition with each other grain. Not only has the composition and size of grain received attention but apparatus has been devised and built for the purpose of determining the specific gravity or weight of the powder; in other words steps have been taken to make the U. S. Brand an absolutely standard article.

The fact that the U. S. Powder Co. has employed only skilled and experienced Union Labor at its plants since it started in business has contributed not a little to the successful operation of the manufacturing processes in every department, resulting in the recognized superiority of this product.





Have You Your Wife's Welfare at Heart?

THE PEERLESS ELECTRIC HOME LAUNDRY MACHINE WITH IMPROVED SWINGING WRINGER. THE MOST SERVICEABLE, MOST SATISFACTORY AND RELIABLE ELECTRIC MACHINE ON THE MARKET

The Improved New Peerless The Quietest, Most Silent and Noiseless Electric Washer Made

DESCRIPTION OF OUR PEERLESS ELECTRIC WASHING MACHINES

The Peerless Wringer:

Equipped with shifting lever which starts, stops and reverses rolls with perfect ease regardless of load Safety release—releases all pressure on rolls instantly. Special 12 inch power Electric Rolls made of highest quality material Wringer support extending full length of wringer, thus preventing any sag at any time. Special lever permits swinging and locking of wringer in any position Extra wide reversible drain board for use when wringing from one tub to another. Wringer supporting post securely bolted to angle steel frame and entirely independent of tub thus eliminating any strain on the tub

The Peerless Tub:

Attractive in appearance, made of extra heavy copper, tinned on inside. Can also be furnished in galvanized iron, or wood tub made of select southern cypress

Solid wood Peerless made of select pure gum, automatically adjusts itself to quantity of clothes in tub Machined malleable iron Peerless rack held in place by heavy fibre roll which cannot wear out and eliminates noise Special lid locking device holds lid in place and prevents wearing and working loose from hinges Non leak brass drain cock threaded for hose drains tub from bottom

The Peerless Frame and Mechanism:

Main frame or standard made of extra heavy grade angle steel, reinforced and braced at all corners. Cut gears, fully enclosed and operating in hard oil, eliminates wear and noise Extra heavy Peerless lever bracket securely fastened to main frame and does not come in contact with the tub, thereby eliminating all strain on side of tub Improved splash proof motor, specially designed and with excess power to more than take care of heavy load on both washer and wringer. Equipped with improved adjustment for tightening or loosening belt by turning adjusting knob. Easy rolling steel casters, cannot bind and permits machine to be easily moved from place to place. Tub extension frames, made of selected angle steel for holding three extra tubs, are hinged to side of main frame and when not in use are folded up close against tub, out of the way Main frame, tub extension frames and casters attractively finished in aluminum.

Peerless Electric Washer (No. 4K42) Illustrated with extension

Prices quoted are for regular 110 voltage, either direct or alternating current. Odd voltages additional. Prices quoted upon application.

YOUR CHOICE OF COPPER, GALVANIZED IRON OR WOOD (SOUTHERN CYPRESS) TUBS WITH OR WITHOUT EXTENSION

	With Extension (as Illustrated)			Same without Extension)	
No. 4K42	Peerless Washer, Copper Tub, each	$156.00	No. 4K40	Peerless Washer, Copper Tub, each	$149.50
No. 4K38	Peerless Washer, Galvanized Iron Tub, each	139.10	No. 4K36	Peerless Washer, Galvanised Iron Tub, each	133.25
No. 4K34	Peerless Washer, Wood Tub, each	139.10	No. 4K32	Peerless Washer, Wood Tub, each	133.25

Facts About the Peerless Ball Bearing, High Speed Washing Machines

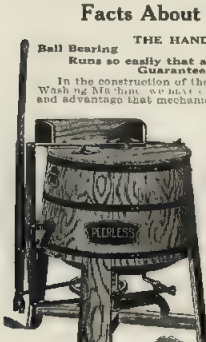
THE HAND POWER TYPE

Ball Bearing — High Speed

Runs so easily that a mere child can operate it

Guaranteed for Five Years

In the construction of the Peerless Ball Bearing High Speed Washing Machine we have combined every practical idea and advantage that mechanical ingenuity and skill can produce in a high-class washing machine



During our forty years' experience in the manufacture of highest quality family sewing machines, with which the whole world is now familiar, we have established an enviable reputation. This same skill and ingenuity—this invaluable experience of two score years, has enabled us to produce the Peerless Washer—a machine that stands at the head of all strictly first-class, high speed washers

All metal parts are finished with the electro galvanizing process—it is an attractive finish that will not wear and cannot rust

The Peerless Washing Machine runs so easily that a mere child can operate it

The Peerless Washing Machine is guaranteed against defective workmanship and material for a period of five years

The tub is strongly built of well finished, select material with reasonable care it will last for years

The ball bearing is a simple and most effective device It is absolutely the easiest running bearing that can be made, and is so constructed that it will wear for years without oiling or adjustment

The compound lever construction in connection with the Walking Beam, and the exclusive ball bearing gives the Peerless such a decided advantage that it requires but one-half the labor to operate it that is necessary with other makes

This type, namely the high speed washer with balance wheel has proved to be the most practical and easiest running washing machine devised. The improvements we have embodied in the Peerless Washer, place it in the van of all machines of this particular type

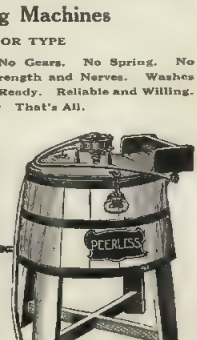
No. 4K20 Peerless High Speed Hand Power Washing Machine $[illegible]

WATER MOTOR TYPE

Adapted to Low Pressure. No Gears. No Spring. No Complications. Saves Time, Strength and Nerves. Washes Clothes White as Snow. Always Ready. Reliable and Willing. Just Attach Hose, Turn on Water That's All.

The Motor:

The Peerless water motor is gearless This prevents noise and lost motion and insures the easy running qualities that are absolutely necessary in a motor that will operate, as does this one, on a very low water pressure It has no frictional parts, it is self-draining and non-freezing; requires no oiling, will not wear, rust or stick. The bearings are non-metal



The Tub:

The tub is well built of highly finished, selected cypress and will hold fifteen gallons of water If given reasonable care, it will not warp or shrink

The Advantages:

The Peerless water motor washing machine is the greatest labor saving device for womankind that has ever been invented The motor does all of the work. You do nothing except filling and refilling the tub until the washing is completed All drudgery is eliminated on wash day with the families blessed with our Peerless water motor washer.

No. 4K21 Peerless High Speed Water Power Washing Machine **$35.10**

LAWN MOWERS

PENNSYLVANIA GRAND

Complete Equipment—Riding Type.

Horse Lawn Mowers

Pennsylvania Grand Horse Lawn Mowers. Fitted with 4 or 6 Crucible Tool Steel Knives, hardened and tempered in oil. The wheel at the right of the driver's seat regulates the height of cut from ¾ to 2¾ inches and the operator can adjust same without leaving his seat. All wear on knives is taken up by set screws on top of the Cylinder Journal Boxes. The Cylinder Journals run in phosphor bronze boxes and all wear can be taken up by a set screw. The Journal Box is floating or self-aligning. **Self-sharpening. Stationary Knife. Cylinder,** 7½ inches. Diameter of Drums 16 inches.

With Handles, Seat, Shafts and Footboard.

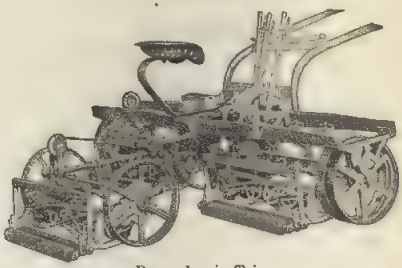
Width of Cut, inches.....	30	38
Four Knives .....Each,	$240.00	300.00
Six Knives .....Each,	265.00	325.00

With Handles and Draft Irons Only.

Width of Cut, inches.....	30	38
Four Knives .....Each,	$200.00	260.00
Six Knives .....Each,	225.00	285.00

PENNSYLVANIA TRIO

Can Be Drawn by Horse or Tractor.



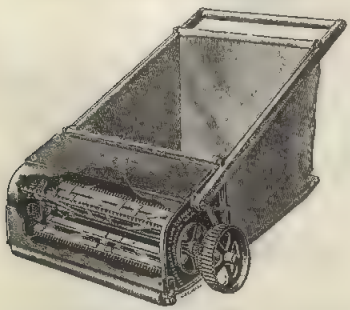
Pennsylvania Trio

The Pennsylvania Trio consists of three specially constructed 30-inch, 4-blade mower units, high gesred, so yoked to a frame or sulky that a cutting swath of 86 inches is attained. Width over all 109 inches. Made especially for golf courses, public parks, cemeteries and all grounds where large areas of undulating surface present difficult problems of lawn mowing. Each mower unit acts independently of the others, being pivoted to the frame, enabling them to ride over uneven surfaces and to closely follow the undulation of the ground. The frame is supported on two separate ground wheels thereby relieving the cutting units of any extra weight, overcoming the objection of wheel marks on the turf and also giving the mowers greater flexibility and greater efficiency.

Each mower unit may be raised separate by means of the three levers, and when lifted to the highest point the cutting cylinders are automatically disengaged or idled. **The wheels** are 18 inches in diameter, 2½ inch tread. They are fitted with automobile-type ball bearings. **Cylinders**—4 Knife, 30 inches, 6¾-inch diameter. **Adjustments** are quick, made by tightening two regulating screws and bringing the cylinder closer to the bottom knife. Shipping Weight, 930 pounds.

Pennsylvania Trio .....Each, $500.00

LAWN CLEANER AND RAKE



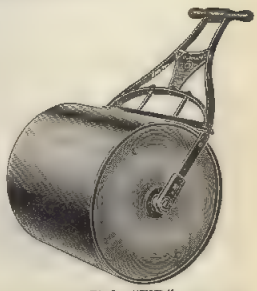
Pennsylvania Lawn Cleaner and Rake. This Machine is easy to operate and with it one man can do more and better work than four men with hand rakes. Will remove the cut grass, litter, leaves and all sorts of trash, leaving the grass standing upright.

Size, inches	24	36
Each	$35.00	50.00

Packed One in a Crate.

LAWN ROLLERS

Dunham One Section "Water Weight" Lawn Rollers. **Without Handle Weights. Roller Bearing** and easy to operate. Rollers are electric welded, making the water section one solid drum. No rivets are used, therefore it cannot leak.



Style "WB."

Nos.	Diam., Inches	Length, Inches	Weight, Pounds			Price Each
			Empty	Filled with Water	Filled with Sand	
WB3	14	20	46	148	222	$18.50
WB5	18	24	76	274	411	22.25
WB7	24	24	95	418	627	25.75
WB9	24	32	135	590	850	28.00

PENNSYLVANIA & OHIO LUMBER CO.

1504-8 Oliver Bldg., PITTSBURGH, PA.

PITTSBURGH OFFICE
Oliver Building
Grant 4154-5

CLEVELAND OFFICE
Williamson Building
Main 1892

Manufacturers and Wholesalers

Lumber, Ties, Mine Material

Creosoted Ties and Timbers

Products

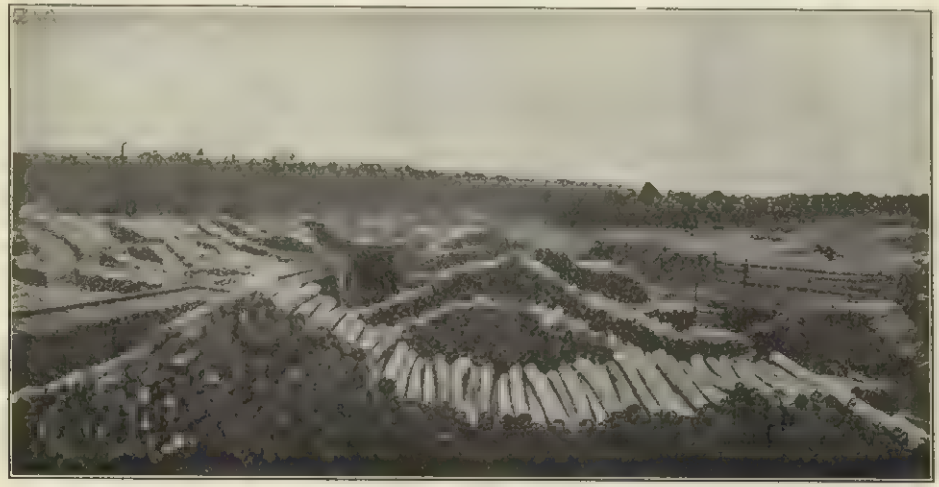
Hardwoods
Yellow Pine
White Pine
Hemlock
Fir
Spruce
Sprags
Lagging
Mine Ties
Mine Posts
Mine Rails
Mine Caps
Mine Car Plank
Railroad Ties
Poles
Cordwood
Dimension Oak
Cross Bars
Brattice Boards
Tipple and Trestle Timbers
Shaft Guides
Staves
Building Lumber—Rough and Finished Grades
Bark
Pacific Coast Lumber Products

Creosoted Under Pressure

We are sole representatives in this district for Bond Bros. of Louisville, Kentucky, who operate one of the largest Creosoting plants in the country.

Such articles as Mine Ties, Piles, Poles, Wood Blocks, Bridge Timbers, etc., give greatly increased life as a result of such treatment.

Prevent the decay of your timbers by Creosoting at a small additonal outlay.



Concentration Yards at Louisville, Ky.

Shipping Facilities

Our sources of supply are located on all the principal railroad systems leading to the bituminous coal regions, which insures prompt delivery.

We are equipped to furnish any amount of lumber for Mining and Industrial Housing propositions, as well as lumber for mine work, tipple timbers, railroad ties, etc.

Preservative Treatment

We are equipped to treat all classes of lumber, ties and mine material with either creosote oil or zinc chloride.

References

We will refer you to some of the largest coal mining companies in the Pittsburgh, Connellsville and Ohio regions as to our ability to give satisfaction.

Inquiries

All inquiries will receive prompt attention. We are in a position to furnish promptly any of the items mentioned above.

Send Us Your Inquiries For Lumber, Mine Material, Creosoted Ties and Timbers.

C. V. McCREIGHT LUMBER CO.

1625-1629 Oliver Building
PITTSBURGH, PA.

Sales Department
Traffic Department
Grant 8831 and 8832

R. R. and Mine Material Department
Accounting Department
Grant 4571

Manufacturers and Wholesalers

LUMBER

Railroad and Mine Materials

Mine Car Oak.
Tipple Timbers, All Kinds.
Mine Props, Standard and Rounds.
Mine Ties.
Mine Rails.
Brattice Boards.
Mine Caps.
Crossbar Timbers.
Building Lumber.
Switch Ties.

Our mills are located close to all Pennsylvania, Ohio and West Virginia coal fields and we are in shape to handle rush orders on short notice. We always have a good stock of posts, ties, rails and caps on hand and, if required, can make immediate shipment if you wire or telephone your requirements. If you need special dimensions in tipple timbers for repairs or new work, will be pleased to give priority to these orders if you so request.

Creosoted Ties and Timbers

It is a fact that lumber, properly treated, will more than double the life of untreated stock, and the additional cost of treatment is very small when you consider not only the original price of material used, but the extra labor costs caused by frequent replacements. Investigate this when you are contemplating permanent repairs or new work.

We are equipped to treat by the zinc process, open tank or pressure systems, the latter, no doubt, giving the most thorough and lasting results.

All treating is done by the latest methods and only the best grade of preservatives is used.

Our plants are so located that we can give prompt shipment on favorable freight rates, thereby competing for business from any section.

Building Lumber

In addition to Mine Material, we are able to render efficient service in supplying all kinds of Building Lumber. Our prices are commensurate with grades and the manufacture we furnish.

By referring to the following tabulations note the various kinds of lumber we furnish. An explanation follows each, designating the purpose for which they are best suited.

WHITE PINE—Suitable for making patterns, flask lumber, flooring, siding, cornice, etc.

CYPRESS—Suitable for tanks, greenhouses, and places where wood is subject to the elements, for instance underground, or for porches, roofs, etc.

REDWOOD—Suitable for all kinds of building material. Makes elegant tanks, silos, porch work, fence pickets, etc., has fine resisting qualities as well.

HEMLOCK—Suitable for ordinary Building Construction.

YELLOW PINE—Suitable for car material, tipples, railroad bridges, mine cars, construction work. We are in position to make quick shipment for house construction or for general purposes. A car can be loaded same day order is received and make delivery from 7 to 10 days, contingent upon accidents beyond our control.

HARDWOODS—In addition to such items as come under this heading for car material, we are also in position to supply Maple and Oak Flooring, Finish, etc.

POSTS—Can be furnished in Cedar, Locust, Chestnut, Cypress, Juniper.

FIR—Suitable for tipples, railroad or car material, barge material, railroad ties, siding and flooring, house construction.

RED CEDAR—Furnished in Bevel Siding, Shingles for house building.

SPRUCE—Suitable for tipples, scaffolds, general construction, also for house building.

MEMBERS: The National Hardwood Lumber Association, National-American Wholesale Lumber Association, Pittsburgh Wholesale Lumber Dealer's Association, U. S. Chamber of Commerce, Pennsylvania State Chamber of Commerce, and Pittsburgh Chamber of Commerce.

PETERS
Advertising Cooperation

Will Increase Your Business

A MAGAZINE advertising campaign which will reach users of ammunition all over the country will be launched by the Peters Cartridge Company in the fall. Over 15,000,000 Peters quality messages will be broadcasted to consumers, many of whom are in your community.

The superiority of Peters Ammunition WILL BE MADE SUPERIOR IN THE CONSCIOUSNESS OF THE MAN WHO HOLDS THE GUN—THE MAN WHO STANDS ON THE OTHER SIDE OF YOUR COUNTER.

Every worth while sportsmen's magazine will be used with liberal space. Field & Stream, Outer's Recreation, National Sportsman, Forest & Stream, Hunter, Trader & Trapper, American Field, Outdoor Life, American Rifleman, Rod & Gun in Canada, Outdoor America, Farm Journal, Farm Life, Farm & Ranch, Western Farm Life, Minnesota Farmer—and many others just as good make up the list.

And every one of these messages not only will tell of the inherent Peters qualities which make these shells preferred, but also of Peters "High-Velocity" Loads—hard-hitting, result-getting, shells that have extended the usual shotgun range by many yards.

This is a real ammunition selling opportunity for the progressive dealer. It means easier, quicker, more profitable business. Ask your jobber, or write us

THE PETERS CARTRIDGE COMPANY
Department 36
New York CINCINNATI, OHIO San Francisco

PETERS AMMUNITION

Say you saw it in GOOD HARDWARE

ASSORTMENT No. 2 C.
PEXTO CLAW HAMMERS

Size 13" x 18¾"

ASSORTMENT No. 2 B.
PEXTO BALL PEIN HAMMERS

Size 13" x 18¾"

The Display Fixtures are metal, lithographed in four colors—orange, blue, black and white. They are equipped with wire easel for standing on the counter or in the window and chain hanger for hanging on the wall. A Display Fixture is sent gratis with each assortment.

Each Assortment consists of eighteen Pexto Hammers, three of which can be mounted on the Display Fixture. The Hammers displayed are the most popular styles and sizes.

Assortment No 2 C consists of the following Hammers:—

10—No 011½
6 -No 11½
2—No. 91½

Assortment No. 2 B Consists of the following Hammers:—

2—No. 123
4—No. 125
12—No. 126

Each Display Fixture is packed in a corrugated box, the hammers in pasteboard boxes
Each Display and Assortment complete in a wooden case size 22" x 15" x 9" weight 45 lbs

Order an Assortment, the Display Fixture comes no charge.

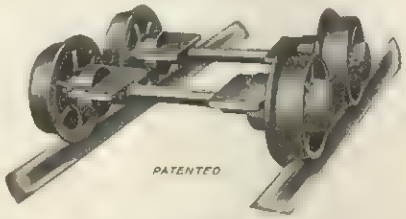
OTTUMWA IRON WORKS

OTTUMWA, IOWA, U. S. A.

Manufacturers of

Ottumwa Iron Works Roller Bearing Car Trucks

The Ottumwa Iron Works has been in the business of manufacturing Mining Machinery for over 52 years. The development of our roller bearing wheels is the result of the accumulated experience of all these years in the manufacture of car trucks. The time of the old type mine car wheel is gone, as

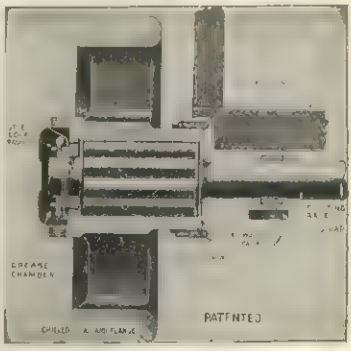


all up-to-date Mine Operators recognize the economy and efficiency of the roller bearing wheels.

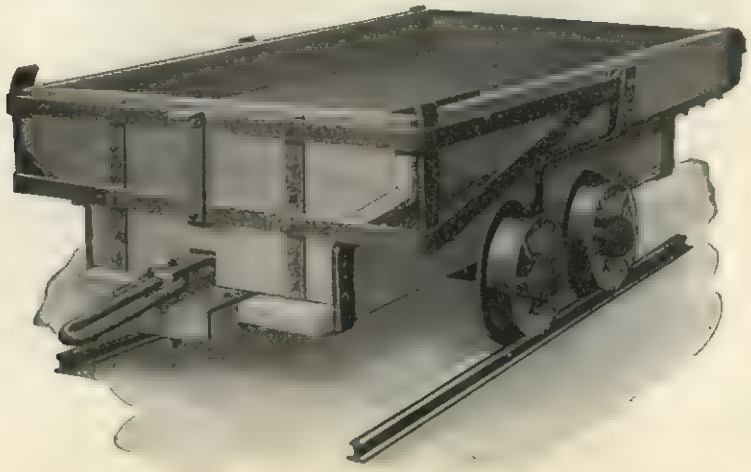
While the initial cost is more than was formerly invested in the old type wheels, the reduction in power necessary to operate the cars and saving in grease greatly overcomes the difference in price.

Ottumwa roller bearing car trucks are equipped with floating axles so that there is no wear on any given point as is the case with the old type fixed axle.

Ottumwa wheels are made of the highest grade material for wheel purposes. The wheels are thoroughly chilled and afterwards annealed. The design and composition of the wheel is the result of years of experience and study, which accounts for the continually increasing volume of our business in this line.



In writing for quotation specify:
Diameter of wheel
Track gauge
Wheel base
Size of axle or
Maximum load the trucks are to carry.
All inquiries will receive prompt attention.



Phillips Mine & Mill Supply Co.

PITTSBURGH, PA.

Agencies:

HUNTINGTON, W. VA.—Miller Supply Company

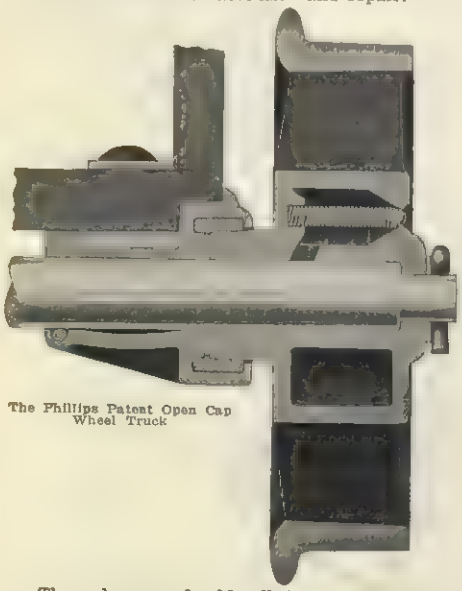
SEATTLE, WASH.—A. F. Blair, C. & M. E.

Mine and Coke Works Equipment

Products

Mine Cars; Mine Car Wheels; Patent Open Cap Wheel Trucks; Gravity Screening Equipment; Tipple Chutes; Radial (End-Loading) Chutes; Screen Bars; Mine Run Weigh Hoppers; Phillips Automatic Cross-Over and Automatic Push-Back Car Dumps; Car Stops and Trip Controllers; Caging Apparatus for Shaft Bottoms; Coke Oven Charging Larries; Cast Iron Frogs and Turnouts, etc., etc.

The Phillips Patent Open Cap Wheel Truck is extremely simple in design and is free from any complicated construction. The wheels have self-closing spring valve oilers contained entirely within the wheel. The linch pin is visible and accessible, and replacements are quickly made. Only ten bolts are required to assemble the truck on the car body—these are of large diameter, and are more effective than a larger number of smaller bolts, and also facilitate the work of assembly and repair.



The Phillips Patent Open Cap Wheel Truck

The axles are of cold rolled steel, the polished surface of which is not touched with a tool at the bearing. Due to this fact and to the nature of the material itself, our axles are stronger than axles of larger diameter made of hot rolled steel with turned journals. They are free from projecting collars, and can be removed without taking the journal boxes off the car.

Steel straps, heavy enough to maintain their efficiency against rust for a long period, connect the journal boxes longitudinally, both over and under the floor, and make a positive and permanent construction, preventing the spreading of wheels due to brake action or striking tipple horns. The axles are held in true alignment at all times.

Phillips Open Cap Wheels are made of new metals, a large proportion of which is charcoal iron, and they are annealed in soaking pits to eliminate shrinkage strains. They are well chilled and give long service. They can be furnished with spring oilers, with steel caps covering the end of the axle, or with oil holes closed with tapped plugs.

The wheels are maintained to gauge by the shoulders formed by reducing the ends of the axles, and the shoulders being inside the wheels run continuously in oil. This construction is responsible for the retention of the lubricant for long periods, and many mines using mine car greases lubricate their Open Cap Wheels only three or four times per year. Being always well lubricated, it follows that wear is reduced and the cars run easily. Phillips Open Cap Wheels and Journal Boxes do not wear in the bore, and are guaranteed for a year in this respect.

Reduces Haulage and Maintenance Costs

Tests conducted by a large operator at three mines with three styles of running gear, on mine cars of about the same loaded weight, and with axles and wheels of the same diameter, gave the following results as to drawbar pull, reduced to level track basis:

1. Straight bored self-oiling wheels on Cold Rolled Axles—24.4 lbs. per ton.
2. Phillips Patent Open Cap Wheel Truck—18.48 lbs. per ton.
3. Roller Bearing Running Gear—15.14 lbs. per ton.

The low maintenance cost of the Phillips Patent Open Cap Wheel Truck is evidenced by the fact that in 15 years journal boxes shipped as repairs amounted to only 56/100 of 1% of the total number of journal boxes shipped on complete trucks, while axle replacements amounted to only 6/10 of 1%.

These Trucks are furnished in all the usual and desirable combinations, as regards diameter of wheels and axles and track gauge, weight of wheels, etc., and we will be glad to furnish full particulars, drawings and prices upon request.

KEYLESS CLOCKS FOR AUTOMOBILES

PHINNEY-WALKER

BROADWAY

Clamped from the Rear—No. Screws

A new high-water mark in fine clocks for motor cars. The outstanding feature of the Broadway is the new method of attachment to the instrument board.

No screws or large flange required. Clock is held firmly in place by means of a special clamp at the rear—entirely out of sight. Gives appearance of being part of original equipment. Beautifully finished in full nickel. Has a black dial, white numerals. Rim Wind—Rim Set—eight day movement

Furnished with two clamps. One for sheet metal instrument boards. The other for boards one-half to three-quarters of an inch thick. Size of flange—2¾ inches Size of hole required—2⅝ inches.

No. 1B—The Broadway. . . . . Each, $15 34

MANHATTAN

One of the smartest-looking timekeepers ever developed. A fast seller on its own merits as a practical, good looking clock. Rim Wind . Rim Set—eight day movement. Easy to regulate and dependable under all motoring conditions. Black dial, white numerals. Two finishes, black lacquered or all nickel. Size of flange—3⅛ inches. Size of hole required—2⅝-inches

No. 2M- The Manhattan . . . . . Each, $16 54

DETROIT

Another Rim Wind, Rim Set, eight day clock for the car owner who doesn't want to invest as much as you ask for the Manhattan Just as good a timekeeper. The dial is black with white numerals. Finish, black lacquered or all nickel. Size of flange—3⅛ inches Size hole required—2⅝ inches.

No. 3D—The Detroit. . . . . Each, $15 34

DENVER

A key wind clock that appeals in price and appearance to an immense class of car owners. Reliable Phinney Walker quality—handsome, strong and a clock that keeps time regardless of jolts, jars, heat and cold An eight day movement Winds with a key from the front. Finished in black lacquer or full nickel, black dial, white numerals. Size of flange—3⅛ inches Size of hole required —2⅝ inches

No. 4D—The Denver. . . . . Each, $10 00

FRISCO

The Frisco model takes care of all the car owners who want to keep the cost of equipment down to the lowest possible figure. Every motorist can afford to have one. It is wound by a concealed stem in the rear and its new type of movement goes for thirty hours on one winding. Black lacquer finish—a smart looking bevelled crystal. Size of flange—3⅛ inches. Size of hole required 2⅝ inches.

No. 5F The Frisco. . . . . Each, $7 34

A QUICK SALE DISPLAY STAND

Here is a striking display board that catches the eye of everybody who owns a car. Looks just like the instrument board of an automobile A beautiful wood finish on sturdy metal. A durable, compelling attention-getter.

The fine Phinney-Walker Clocks for automobiles are mounted on this Display Board—the famous DETROIT, DENVER and FRISCO models

The selling power of this display is apparent. It gives your customers an attractive picture of how one of these fine clocks will look on their own cars

Given free upon receipt of an order for three clocks—one each of DETROIT, DENVER and FRISCO

KLAXON

AUTOMOBILE HORNS

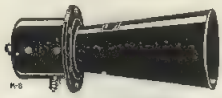
MOTOR DRIVEN HORNS

KLAXON 12A

A powerful big horn at a low price due to simplified construction requiring less labor and material, but backed by the standard Klaxon guarantee. Finished in black with orange rim on projector. Equipped with universal underhood bracket for dash mounting. Easily installed under the hood of any make car. Furnished in either 6 or 12 volts—specify which is wanted.

No. 12A—Length 12½ inches. Shipping weight 7 pounds. Each, $10 00

KLAXON 8—Ball Bearing



A sturdy dependable horn built on the same principles as the big 12A. A horn with a splendid tone note that gets instant attention, whether in the city or the country, and at a remarkable low price. Black finish. Furnished in either 6 or 12 volts. Specify which is wanted.

No. 8—Ball bearing, length 11 inches. Shipping weight 3 pounds. Each, $4 95

HAND OPERATED HORN

KLAXON 3V

A hand operated Klaxon with a vertical push rod. Being as carefully made as the electric Klaxon, it has the genuine, powerful Klaxon note. Furnished with a universal bracket for installation on open passenger cars. Either left or right-hand truck bracket can also be furnished.

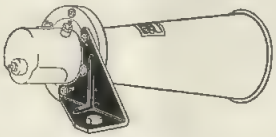
No. 3V—Length 8⅝ inches. Shipping weight 2¾ pounds. Each, $5 00

SUGGESTED BRACKETS FOR MOUNTING

Klaxon 8 and Klaxon 12-A

It is a generally safe assumption that nearly all cars, except those of valve-in-head construction can use the motor mounting. Cars with valve-in-head motors usually require the tripod dash mounting. The list below include most of the popular cars

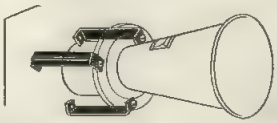
KLAXON MOTOR BRACKET



For Use on the Following Cars.

American 6	Earl	Jordan	Rickenbacker
Chalmers	Ford	Maxwell	Star
Chandler	Gray	Mercer	Stephens
Columbia	Hudson	Moon Lt. 6	Studebaker Big 6
Daniels	Hupmobile	Packard Lt 6	Studebaker Lt 6
Dodge	Jewett	Paige	Willys Overland
Dort 4 cyl			Winton

KLAXON TRIPOD DASH BRACKET



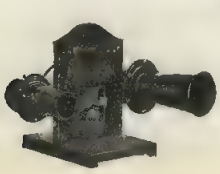
For Use on The Following Cars.

Buick	Essex	Moon Big 6	Reo
Chevrolet	Harley 6	Nash 4 & 6 cyl	Roamer
Cleveland	Haynes mod. 57	National	Stearns 4 & 6 cyl
Cole	Haynes mod. 77	Oakland	Stutz 4 and 6 cyl
Dagmar	Lexington	Oldsmobile	Velie
Dort 6 cyl	Lincoln	Packard Twin 6	Willis St. Claire
Duesenberg	Marmon	Peerless	Willys Knight
Durant			

And other cars where the motor bracket does not fit.

Grounding strip packed with each horn—to take care of single wire systems.

KLAXON DISPLAY STAND FREE



A real sales-help. Beautifully finished in mahogany and gold, wired for two instruments and for connecting to battery so that your customers can actually hear the Klaxon note of warning

If you handle Klaxons regularly and wish one of these stands we will gladly send it to you. Stand designed to hold one Klaxon 8 and one Klaxon 12A

PRODUCE HATCHETS

No. 3005.

Plumb's Pattern Produce Hatchets
With Slot in Bit, Solid Cast Steel, Painted Red, Polished Blade and Poll.

No. 3005—Weight without Handle 12 ounces, 2⅛ inch Bit....Per Dozen, $21.00

Packed—Half Dozen in a Box.

COOPER'S ADZES

No. 80

Applewood Handles, bolted through Handle. Sizes 1 and 1½ are for use on tight barrels, and size 2 is for use on flour barrels.

No. 80—

Size Nos. . .	1	1½	2
Cut, inches.	3¼	3	2¾
Per Dozen.	$59.65	57.10	54.65

Packed—One-Twelfth Dozen in a Package.

BARREL HATCHETS

No. 635

Plumb's Improved Pattern Barrel Hatchets
With Slot in Bit, Solid Cast Steel, Painted Blue, Polished Blades and Poll

No. 635—Size No. 0, Weight without Handle 12 ounces, 2⅜ inch Bit .....Per Dozen, $21.00

Packed—Half Dozen in a Box

STANLEY EVERLASTING BUTT CHISELS

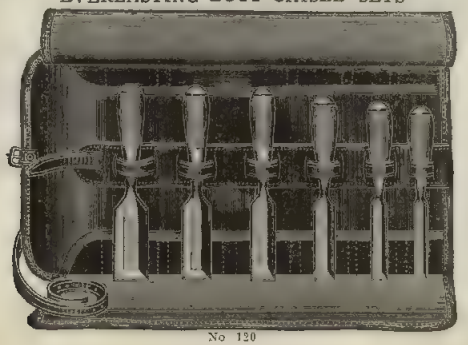
No. 50.

The Blade, Shank and Head are one piece of Solid Steel. Handles are made of selected hickory, strongly ferruled. A leather washer is placed between the head and the handle which acts as a cushion, relieving the handle from shock and preventing same from splitting. Blade has bevel edges.

Width, Blade, inches.....	1/8	1/4	5/16	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2
Length, Blade, inches.....	3	3	3	3	3	3	3	3	3	3	3	3
Length over all, inches.....	8	8	8	8	8	8	8	8	9	9	9	9
No. 50—Per Dozen.....	$12.00	12.60	13.20	13.80	14.40	15.00	16.20	17.40	19.20	21.60	24.00	27.00

Packed Half Dozen in a Box.

EVERLASTING BUTT CHISEL SETS



No 120

Rolls are made of a good grade of canvas edges trimmed with leather and strongly sewed. Weight per set 3¼ lbs

No. 120—Set contains 6 Bevel Edge Butt Chisels, one each ¼, ½, ¾, 1, 1¼ and 1½".....Per Set, $9.50

HATCHETS

PLUMB BRAND

The Advertised Finish

Made from special analysis steel, in one piece. The eye cannot buckle or split open. One quality throughout, mahoganized selected hickory handle.

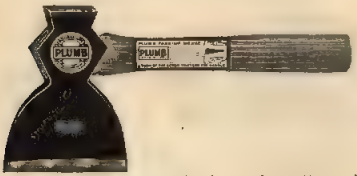
HALF HATCHETS

Forged steel, rustless black finish, selected mahoganized hickory handles, take-up wedge.

Nos.	HF 2961	HF 2962
Size	1	2
Bit, inches	3 1/4	3 5/8
Weight head, lbs.	1 1/16	1 1/16
Weight dozen, lbs.	16	20
Per dozen	$24.00	24.00

One half dozen in a box.

BROAD HATCHETS

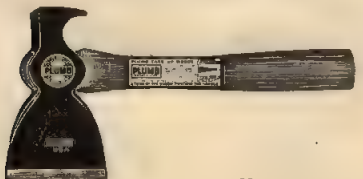


Forged steel, rustless black finish, regular pattern, single bevel, mahoganized hickory handles, take-up wedge.

Nos.	HF 2991	HF 2992	HF 2993	HF 2994	HF 2995
Size	1	2	3	4	5
Bit, in	4	4 1/2	5	5 1/2	6
Wt. head, lbs.	1 1/2	1 3/4	2 1/8	2 1/2	2 7/8
Wt. doz., lbs.	24 1/2	32 1/2	40	48	58
Per dozen	$24.00	24.00	30.00	30.00	36.00

One third dozen in a box.

CLAW HATCHETS



Forged steel, rustless black finish, mahoganized hickory handles, take-up wedge.

Nos.	HF 2971	HF 2972
Size	1	2
Bit, inches	3 1/4	4
Weight head, lbs.	1 1/8	1 1/8
Weight per dozen, lbs.	19	23
Per dozen	$24.00	24.00

One half dozen in a box.

FLOORING HATCHETS

PLUMB BRAND

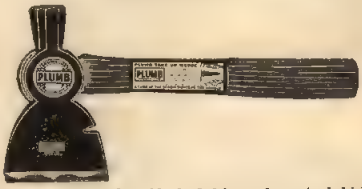
Forged steel, rustless black finish, selected mahoganized hickory handle, take-up wedge.

Nos.	HF 2985	HF 2986
Size	1	2
Bit, inches	3 3/4	4 1/8
Weight head, lbs.	1 3/8	1 5/8
Weight per dozen, lbs.	15	18
Per dozen	$27.00	30.00

One third dozen in a box.

SHINGLING HATCHETS

PLUMB BRAND



Forged steel, rustless black finish, mahoganized hickory handle, take-up wedge.

Nos.	HF 2951	HF 2952
Size	1	2
Bit, inches	3 1/2	4
Weight head, lbs.	1 7/16	1 7/16
Weight per dozen, lbs.	17 1/2	21 1/2
Per dozen	$21.00	24.00

One half dozen in a box.

LEADER

Steel body, black rustproof finish, polished bit, octagon poll, plain face, mixed red and white hickory handles, metal wedge.

Per dozen

No. 62SL—Size 2, bit 3 7/8 in., wt. per dozen 25 1/2 lbs....$6.00

One half dozen in a box.

HATCHETS.

LATHING

PLUMB BRAND

Forged steel, rustless black finish, selected mahogonized hickory handles, take-up wedge.

Nos.	HF2081	HF2082
Size	1	2
Bit. in.	2¼	2½
Wt. head, lbs.	⅞	1 1/16
Wt. dozen, lbs	15	18
Per dozen	$18.00	18.00

One half dozen in a box.

LATHING

PLUMB BRAND

Underhill Pattern

Forged steel, rustless black finish, selected mahogonized hickory handles, take-up wedge.

Nos.	HF1961	HF1962
Checkered, rows	9	10
Wt. head, lbs.	1 1/16	1 1/16
Wt. dozen, lbs.	15	15
Per dozen	$30.00	30.00

One half dozen in a box.

NAIL HAMMERS

V. & B. VANADIUM

Made from special formula Vanadium steel, full polished, adze eye, round face, octagon neck, hand shaved second growth white hickory handle, with wax hole.

Per dozen

No. 41½—Size 1½, weight of head 1 lb., length handle 13 in., weight per dozen 18 lbs. $30 00

One in a carton.

KELLY HAND MADE

Drop forged tool steel, perfect temper, black forge finish, polished face and claw, adze eye, octagon neck and face, walnut stained hickory handle

Per dozen

No. 201½—Weight of head 1 lb., length handle 13½ in., weight per dozen 18 lbs. $12.00

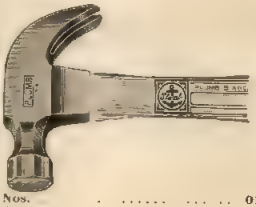
One half dozen in a carton.

NAIL HAMMERS

PLUMB BRAND

Hand forged high grade special analysis tool steel, hardened face, thoroughly tested, second growth hickory handle.

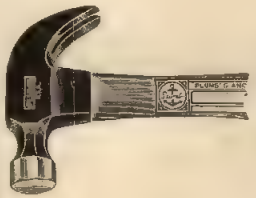
The claws have a knife like edge shaped like nippers that bite and hold. The bend is designed to give greater leverage when drawing nails.



Tool steel, octagon neck, octagon face, adze eye, nickel plated, second growth mahoganized hickory handle

Nos.	010	011	012
Size	1	1½	2
Weight head, lbs.	1 1/16	1 1/16	⅞
Weight per dozen, lbs.	22	19	16
Per dozen	$27.00	27.00	27.00

One half dozen in a box.



Tool steel, rustless black finish, adze eye, octagon neck, octagon face, mahoganized hickory handles, take-up wedge.

Nos.	HF110	HF111	HF112
Size	1	1½	2
Weight head, lbs.	1 1/16	1 1/16	⅞
Weight per dozen, lbs.	22	18	15
Per dozen	$21.00	21.00	21.00

One half dozen in a box

Tool steel, rustless black finish, adze eye, bell face, mahoganized hickory handles, take-up wedge

Nos.	HF80		HF81
Size	11		11½
Weight head, lbs.	1¼		1
Weight per dozen, lbs.	21		18
Per dozen	$21.00		21.00
Nos.	**HF82**	**HF83**	**HF84**
Size	12	13	14
Weight head, lbs.	1 1/16	1 1/16	¼
Weight per dozen, lbs.	15	6	4
Per dozen	$21 00	18.00	18.00

One half dozen in a box

A COMPLETE LINE OF FINE THERMOMETERS

ESPECIALLY LOW PRICED. ILLUSTRATIONS REDUCED SIZE. PRICES EACH

No. H2545 No. H1314 No. H96 No. H5452 No. H5218 Baby No. H1300

No.	DESCRIPTION	Price
No. H2545	Taylor Quality. Medium Grade Permanolor Filled Tubes, 8-inch, Black Oxidized Brass Scales. Oak or Cherry finish back, each	$ 2.20
No. H1314	Tycos Quality. Best Grade Permanolor Filled Tubes, 6-inch, Black Oxidized, Brass Scales. Mahogany Back. Piano Finish, each	3.00
No. H96	Tycos Quality. Best Grade Mercury Filled Tubes 10-inch Oxidized Brass Scales. Brass Japanned Tin Case, each	3.60
No. H5315	Taylor Quality. Medium Grade Permanolor Filled Tubes, 10-inch Sand Zinc Scale. Weather-proof. Permanent Fixtures with metal arms for attaching to outside of window, each.	2.40
No. H5452	Tycos Quality. Best Grade Self Registering Hygrometer. Oxidized Brass Scales, Black Japanned Tin Case, each	11.10
No. H5618	Baby Bath Thermometer. White Enamel Finish, Stiff Spring Permanolor Filled Tube. Indicates temperature of the water. Easily read. Floats. Not easily broken. Combines novelty and usefulness. Size 4x4x8 inches, each	1.40
No. H1300	Tycos Quality. Best Grade Mercury Filled Tubes, 8-inch Oxidized Brass Scales. Oak Back, each	2.40

Standard and Reliable Clinical Thermometers and Cases

No. H53110 Thermometer, Clinical Long Front in rubber case, certified 1 minute, each $3.00

No. H53110A Thermometer, Clinical, same as No. H53110, in metal case, each 3.60

No. H53110 Thermometers

No. H53111 The markings on the scale of this thermometer are etched in both red and black. Within a radius of temperatures that are below normal the scale markings are etched in black and above normal in red, ½ minute, certified, each $4.95

No. H53111A Same as No. H53111, only 1 minute certified, each 4.55

No. H53111 Thermometers

No. H53115 Thermometer Case, sterling silver, plain, each $18.20

No. H53115A Thermometer Case, gold plated, plain, each 6.00

No. H53115 Thermometer Cases

No. H53118 Thermometer Case, extra heavy sterling silver, heavy hand carved and tapered, each $14.00

No. H53120 Thermometer Case, extra heavy sterling silver, heavy hand carved, each $14.00

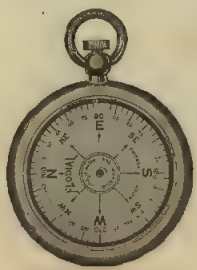
No. H53118 Thermometer Cases

Fine American Make Compasses for Pocket Use, Attractively Low Priced.

FOR FISHERMEN, HUNTERS, PEDESTRIANS, MOTORCYCLISTS, AUTOMOBILISTS, TRAVELERS, TOURISTS, BOY SCOUTS, CAMPERS, SAILORS, WOODSMEN, FARMERS. IN FACT, ALMOST EVERYONE APPRECIATES A GOOD COMPASS. ALL MADE WITH UNTARNISHABLE SILVERED METAL DIALS AND AMERICAN MADE SOLID WHITE NI[illegible]SES.

Taleway Compass, black oxidized brass case, flat needle, reversed card dial. No. H4999 Each $1.50

Leveled Compass, flat needled jeweled center. No. H2910 Each $2.40



Pivital Compass, floating dial, jeweled center. No. H2812 Each $2.80

Cadvel Compass, flat needle, jewel center. No. H2914 Each $4.25

"PRIEST'S"

Est. 1865

Hand Clippers and Horse Clipping Machines

Our toilet clippers have always been recognized as ideal for household use. Light, keen, durable, simple. "Priest" quality has been famous in all kinds of hair shearing instruments for over fifty years.

Hand Hair Clippers

Wide Awake Nos. 1, 0, 00. Popular price, malleable handles, nickeled, plain comb, coarse toothed plates.

Columbian Nos. 1, 0, 00. Medium grade, aluminum handles nickeled, Nos. 0, 00, have grooved comb and fine teeth for trimming.

Express Nos. 1, 0, 00. Medium grade, malleable handles nickeled, ball bearing action. Nos 0, 00 have grooved comb and fine teeth

Standard No. 1, 0, 00. Professional clipper, aluminum handles, nickeled, grooved comb in all sizes.

Shaver No. 00, 000. Professional neck and beard clipper, aluminum handles, nickeled.

Martlet, Improved No. 1, 0, 00, 000. Medium grade 1-00 sizes have coarse teeth for fast work.

Tiger 00, 000. Popular price neck and beard clipper. Aluminum handles, nickeled

Hand Horse Clippers

Hunter Small size fetlock and dog clipper. Nickel Plated.

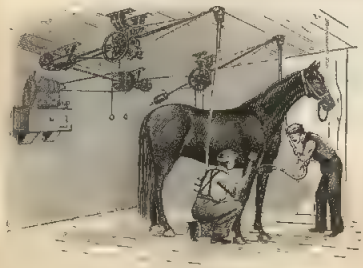
No. 84 Fetlock and dog clipper. Nickel Plated Standard Size

BB Highest Grade. Anti-friction bearings, cap, nut and shanks. Nickel Plated.

New Market Pattern. High Grade. Every mechanical feature of BB except Ball Bearings

Lenox. Popular price. Detachable plate three point balance design. Plain finish.

Power Clippers and Grooming Machines



No. 7 Horse Clipping Machines

Single—one operator. Double—two operators. Electric or any other power drive. Balance arm, all steel flexible shaft (not chain), special pulley head.

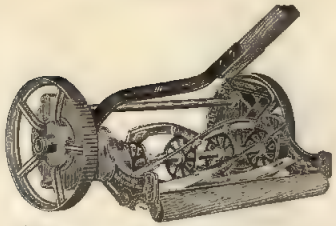
No. 40

Hand operation only. Steel frame, positive drive, balance arm, swivel base, all-steel flexible shaft

American Shearer Mfg. Co.

Nashua, N. H., U. S. A.

LAWN MOWERS
TRIUMPH



Genuine Timken Roller Bearings, Self-Adjusting Triple Gears

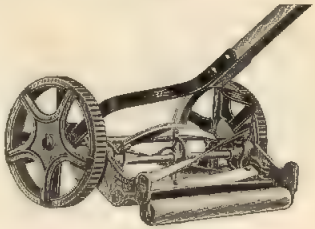
Five heavy high carbon tool steel blades, hardened and tempered in oil, secured to steel shaft extending full length revolving cutter. Raised edge bottom knife of chrome vanadium steel, self-sharpening, can be adjusted to cut as low as ⅛ inch, open spoke design drive wheels, finely cut triple gears, one set on each side, enclosed in a dust proof gear case, special quality hardwood handle with patented reinforced head clamp, hard maple roller. Handsomely enameled and decorated in bronze.

10 Inch Drive Wheels

Width cut, in.	16	18
Weight each, lbs.	73	77
Each	$27.50	30.00

One in a box

LAWN MOWERS
KNOX



Ball Bearings

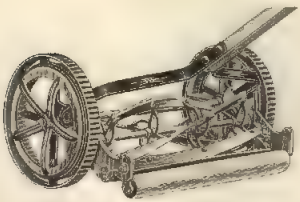
Four best quality crucible tool steel blades, tempered in oil and self-sharpening, solid cold rolled steel reel shaft with heavy malleable spiders firmly attached, highest quality tool steel bottom knife, screw adjusting design and easy of access, steel wheel spindles are part of the shrub rod that extends through mower. Handsomely finished and decorated in bronze.

9 Inch Drive Wheels, 5½ Inch Diameter Reel

Width cut, in.	16	18
Weight each, lbs.	48	52
Each	$14.00	15.00

One in a box.

H H H



Ball Bearing, Self-Adjusting

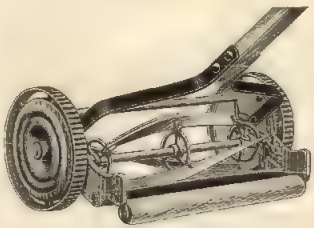
Four spirally formed crucible steel blades, oil tempered and self-sharpening, full length solid steel reel shaft forms a journal which revolves on highest grade self-adjusting ball bearings, highest grade crucible tool steel bottom knife, solid steel shrub rod extends through entire length and provides steel axles for wheels, hardwood handle and roller. Handsomely finished and decorated in bronze

10½ Inch Drive Wheels

Width cut, in.	16	18
Weight each, lbs.	59	61
Each	$16.00	18.00

One in a box.

WINNER



Plain Bearings

Three high grade steel blades, carefully tempered and spirally formed, machinery steel reel shaft with adjustable brass bushings to take up wear, screw adjustment throughout, all parts machined and fitted to insure accurate construction, hardwood handle and roller. Handsomely finished and decorated in bronze

8 Inch Drive Wheels, 5½ Inch Diameter Reel

Width cut, in.	16
Weight each, lbs.	42
Each	$10.00

One in a box

LAWN MOWER REPAIRS
FOR H H H AND KNOX MOWERS

PINIONS

	Each
No. 35—Old style	$0.50
No. 36—Old style	.50
No. 55—New style	.50
No. 66—New style	.50

STEEL PAWLS

	Each
No. 415—Old style	$0.20
No. 916—New style	.20

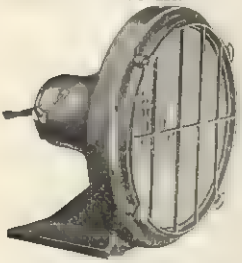
THE PYLE-NATIONAL COMPANY

1334-1358 N. Kostner Ave., CHICAGO

Special Mine Type Headlights

Special Mine Type Headlights

The cast metal headlight cases illustrated are made of an aluminum alloy, and combine features and refinements superior to headlight standards heretofore demanded as essential for mine use.



Special Mine Type Headlight No. 1045 M

Special Mine Type Headlight No. 2050 M

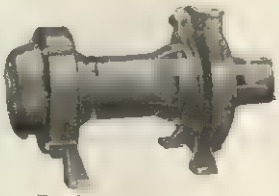
They can be furnished with either copper or nonglare glass reflector. The front lens is designed to give a "T" shape beam of light directly down and ahead of the locomotive with a good side spread.

Front lens is protected by a grid, easily removed when cleaning lens. Door has a packing to exclude dust and water

Turbo-generators

Pyle-National Turbo-generators were designed with the thought of providing a simple, rugged unit to meet the service requirements of coal mine operations, locomotives, loading cranes and steam shovels.

They embody the most recent developments in self-contained, direct current units and operate on steam pressures from 75 lbs. up.



E and ES Turbo-generators

Net weight, 275 lbs.; height, 18½ in.; width, 16½ in., length 30 in.; capacity, 1500 watts Voltage 32 64 or 110

Built with capacity ratings as follows

Type	"K-2"	½ K W	— 32 Volts
Type	"E-2"	½ K W	32 to 110 Volts
Type	"E"	1½ K W	32 to 110 Volts
Type	"ES"	1½ K W	32 to 110 Volts
Type	"T"	3 K W	32 to 220 Volts
Type	M	3 K W	32 to 220 Volts
Type	M	4 K W	32 to 220 Volts
Type	"M"	5 K W	32 to 220 Volts
Type	"M"	7½ K W	32 to 220 Volts

Refinements in the direction of efficiency have resulted in a lower steam consumption than has ever before been obtained in a successful turbo generator of their size and capacity, and when the total electrical requirements are below the normal capacity, only sufficient steam to perform the actual work is admitted to the turbine nozzle.

The speed and voltage control is combined in a positive regulating mechanism that compensates for variation in steam pressure, eliminating the installation of expensive switchboards, rheostats, or other regulating devices

They are simple to operate, adjust and maintain without inconvenience or delay, and every part is manufactured, assembled and tested within our own plant, therefore fully guaranteed

Safety Portable Hand Lamp. Type H.L.S.-20 with reflector

Safety Portable Hand Lamps

Safety Portable Hand Lamps are of rugged construction, built to eliminate the possibility of electric shock. The weather-proof receptacles are of moulded insulation and have spring contacts. All types are furnished with strain relief bushings in the handle so that the strain is taken on the cord and not on the receptacle wires.

PYLE-O-LYTES

The floodlight shown is one of many types designed to meet the need for permanent efficient projectors, capable in their various types and capacities of filling every present requirement.

They are reliable lighting units, rugged, compact and simple in construction, built to withstand all kinds of weather, and easily accessible for cleaning.

Their splendid reflecting power makes fewer units necessary, and gives the maximum in uniformly effective illumination with a minimum installation cost and current consumption.

The type, number, and size of some of our leading styles of floodlights are given below:

14-Inch Floodlight No. 1460.

For 500 to 1500-watt lamps height, 26¾ in.; weight 40 lbs

Size	Type No	Lamp Wattage
10"	[illegible]	[illegible]
12"	1261	500 or 1 750
12"	1[illegible]	[illegible] and 750
14"	1414	500 to [illegible] inl 1500
14"	1460	500 to 1000 inl 1500
18"	2303	750, 1000 and 1 [illegible]

The above PYLE-O-LYTES can be furnished with either copper or glass reflectors, and the choice of either of three different styles of lenses. One lens gives a narrow beam of light, another a broad diffused beam, and another a rectangular beam.

Bodies are of cast aluminum alloy and finish is natural aluminum. By the substitution of materials unaffected by action of gas, moisture or other deteriorating agents, the floodlight projectors have been developed to the point where it is possible to eliminate paint. This means that a product that can "stand up" and stand critical inspection without paint is one of high order and careful construction; and the elimination of painting or enameling makes possible a better schedule of shipment, and does away with the necessity of repainting later.

Electric Hand Lantern

Electric Hand Lanterns

The electric hand lanterns are made of heat-treated cast aluminum alloy, of high tensile strength, built to withstand severe service. They are constructed to give the maximum protection to battery and bulbs, so that the longest life and best service can be obtained. The lanterns are weatherproof; will not rust or corrode; and the battery is protected from moisture to prevent deterioration. The switch is of rugged construction, mounted on moulded insulation of high tensile strength.

In addition to the above, we are prepared to furnish direct from stock—electric fittings such as safety first switches, plugs and receptacles, conduit fittings and junction boxes.

FIRE EXTINGUISHERS

PYRENE

No. 1B

No. 1G

Pyrene is the enemy of fire of every kind. Blazing gasoline is as easily extinguished with Pyrene as burning shavings. If carried on your automobile it means 15 per cent reduction in the insurance premium.

Pyrene will not freeze at 50 below zero. Hence it is particularly adapted to use in cold climates, or in buildings exposed to extremes of temperature.

Pyrene never deteriorates with age. Hence there is no expense for up-keep. It is a non-conductor, hence it can be used with absolute safety on electrical fires.

Pyrene contains no water. It will not injure the purest fabric or stain the most delicate colors. Inspected, approved and labeled by the Underwriters Laboratories Inc. Passed by the U. S. Steamboat Inspection Service. It is a clear fluid of aromatic odor. When exposed to 200 degrees of heat it turns into a heavy gas that settles on the flames and extinguishes them by shutting off the air.

No. 1-B Extinguishers—1 qt. Brass, with Regular Bracket	Each,	$12.00
No. 1-G Extinguishers—1 qt. Brass, with Glass Front Bracket	"	16.00
No. 1½-B Extinguishers—1½ qt. Brass, with Bracket	"	15.00
Pyrene Liquid—Quart cans	"	1 80
Pyrene Liquid—1 gallon cans	"	7.20
Watchman's Holster—For Pyrene Extinguishers	"	1.50
Glass Front Bracket Box	"	3.00
Japanned Vehicle Brackets	"	1.00

ACCURATE PUMP TANK

Accurate—Capacity, 5 gals. A heavy, japanned, portable Tank, with pump and hose for using water. Weight each, 15 lbs. ...Each, $18.00

NON-FREEZING COMPOUND

Pyrene Pump Tanks will not freeze when used with Non-Freezing Compound. Unlike fire pails or barrels, the Pump Tank will not accumulate dirt and rubbish, and the closed top prevents evaporation. To prevent freezing Pump Tanks should be charged with Pyrene Non-Freezing Compound as follows:

Ten pounds of Freeze-Proof prevents 5-gallon Pump Tank freezing at 10 degrees above zero, and 15 pounds at 10 below.

Non-Freezing Compound.....Per pound, $0.20

In 10-lb packages only

2½ GALLON SODA AND ACID

Approved and labeled by the Underwriters' Laboratories, Inc.

Made of cold-rolled copper, burnished outside and heavily plated inside with non-corrosive metal. In the head is a "cage," which holds a bottle half filled with sulphuric acid. The tank is filled with a solution of bicarbonate of soda.

To use the extinguisher it is simply turned upside down; the lead stopper falls out and the mixing of the acid with the soda solution generates a gas pressure that will throw a stream 40 feet. The stream can be shut off by turning the extinguisher right side up again.

Our fire extinguishers are tested to 350 pounds pressure, but the working pressure is only about 100 pounds.

As the cost of recharging these extinguishers is slight, the upkeep expense is low.

The Guardene Extinguisher is of specially substantial construction and in addition has a very valuable improvement over all other makes in the patented "non-slop" stopple and baffle plate. This makes it safe for carrying on a truck, logging engine, harvesting machine or boat in heavy weather.

The Elkhart Extinguisher is thoroughly well made and is dependable.

Both the Guardene and the Elkhart bear the Fire Underwriters' label and are approved by the U. S. Steamboat Inspection Service.

Guardene—2½ gal. Complete	Each,	$20 00
Elkhart—2½ gal. Complete	"	18.00
Soda and Acid Extra Charges—For all 2½-gallon extinguishers	Per dozen,	6.00

PHOMENE

In size and outward appearance, Phomene resembles the Guardene 2½ gallon Soda and Acid Extinguisher, and will extinguish any fire that the Soda and Acid Extinguisher would handle. But that's not all—

Phomene Extinguishes Fires that the Soda and Acid Extinguisher Would Not Touch.

The soda and acid extinguisher ejects 2½ gallons of water. Phomene ejects 20 gallons of fire-fighting foam, and this foam is effective on burning liquids as well as dry materials.

Phomene extinguishes burning oil, enamel, tar, wax, grease, shellac, lacquers, inflammable solvents or chemicals. We recommend Phomene for general protection, to replace the old style soda acid extinguisher, except for electrical fires.

Phomene is labeled by the Underwriters' Laboratories, and endorsed by insurance authorities generally as a substitute for the soda and acid extinguisher.

Motor cars, trucks, motor boats, street cars, railway coaches, mine locomotives and all other moving vehicles use the Pyrene, which is more compact, non-freezing and not affected by slopping.

Phomene—2½ gallon. Polished copper. Complete with charge. Weight, 28 lbs.	Each,	$25.00
Extra Charges—Weight, 7 lbs.	Each,	1.75

FIRE EXTINGUISHERS

PYRENE FACTORY ENGINE

Forty Gallons Capacity

No. D-2—Height, 60 in. Width, 30 in. Wheel diameter, 50 in. Weight empty, 350 lbs. Weight charged, 640 lbs. ..... Each, $375.00

This engine is designed for indoor protection or for use on smooth ground, where one man can handle it. It is narrow enough to go through an ordinary doorway, narrow aisles, etc. It is the loose stopper type, eliminates all valves and is fool proof.

Included is 50 feet of chemical hose and an eccentric shut-off nozzle. The tank is of galvanized steel, hot process, tested 350 pounds per square inch cold water pressure and guaranteed against corrosion. Charged with 7 pounds of sulphuric acid and 20 pounds of bicarbonate of soda, with 33 gallons of water. Will throw a heavy stream 50 feet.

PYRENE FACTORY ENGINE

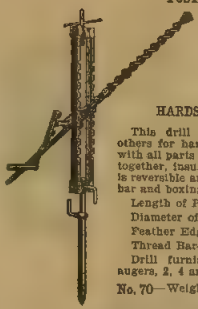
Twenty Gallons Capacity

No. D-1—Height, 45 in. Width, 20½ in. Wheel diameter, 18 in. Charged with 3 pounds of sulphuric acid, 10 pounds of bicarbonate of soda, 17 gallons of water. Weight empty, 150 lbs. Weight charged, 300 lbs. ..... Each, $187.50

This engine is designed for small manufacturing plants or isolated sections of larger plants. The tank is galvanized steel, hot process, tested 350 pounds per square inch cold water pressure and guaranteed against corrosion. Included is 25 feet of hose and an eccentric shut-off nozzle that cannot corrode

COAL DRILLS

POST



HARDSOCG, TYPE "E.C.Q."

This drill is recommended above all others for hard coal. Simple adjustment, with all parts machined and properly fitted together, insuring long wear. Thread bar is reversible and, if turned frequently, both bar and boxing will wear longer.

Length of Post, 3¼ feet.

Diameter of Augers, 1⅝ inches.

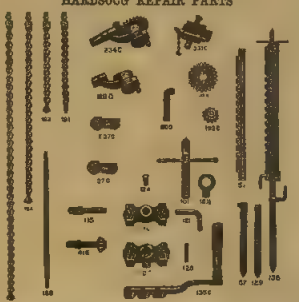
Feather Edge, Side Gear.

Thread Bar—8 threads per inch.

Drill furnished complete with set of augers, 2, 4 and 6 ft.

No. 70—Weight, 95 lbs. ..... Each $24.00

HARDSOCG REPAIR PARTS



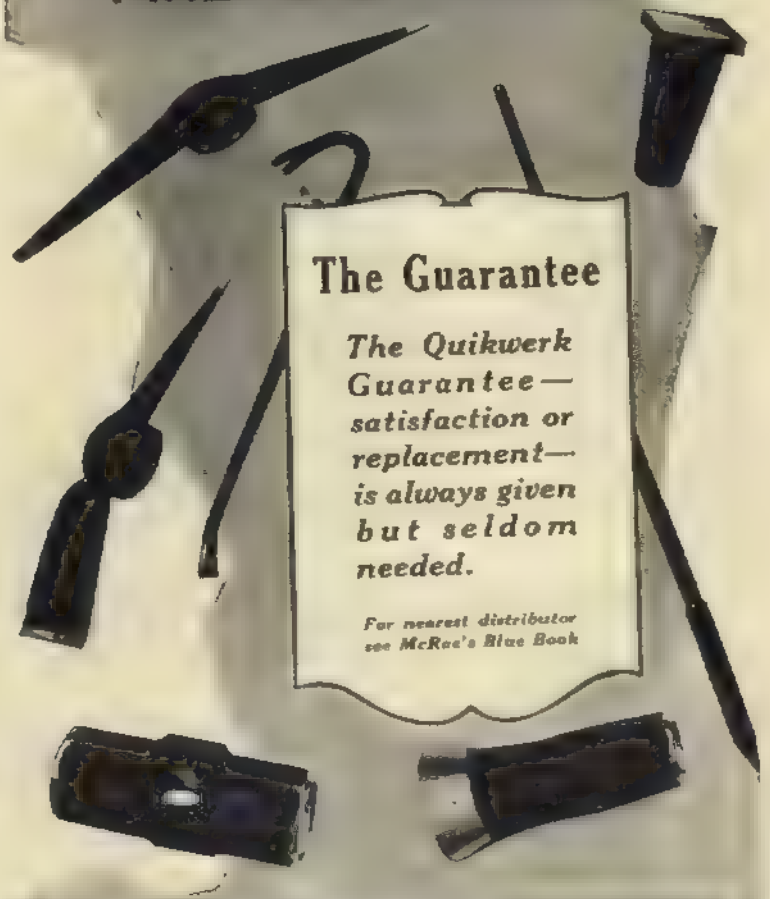
*No. 11C—Post casting for jackscrew. ..... $
*No. 12C—Post casting for boot. .....
*No. 16¼—Ring for boot .....
*No. 37C—Socket for auger, plain .....
No. X37C—Socket for auger, spiral .....
*No. 41E—Journal and small wheel .....
*No. 51—Corrugated side bar for post, per foot. .....
*No. 57—Boot, 1¼ inch .....
*No. 101—Jackscrew for post .....
No. 103C—Small gear wheel .....
No. 109C—Large gear wheel .....
*No. 115—Journal only .....
*No. 121—Tail set screw for No. 12C .....
*No. 124—Set screw for post. .....
*No. 126—Spring cotters, per dozen .....
*No. 128C—Gear frame .....
*No. 129—Stem for post, 1¼ inch. .....
No. 135C—Crank .....
*No. 138—Post complete, 3 ft. and under. Always specify length. Post over 3 ft. takes advance in price .....
No. 155—Thread bar. 8 threads per inch .....
No. 91—Two foot feather edge auger extension .....
No. 92—Two foot feather edge auger .....
No. 94—Four foot feather edge auger. .....
No. 96—Six foot feather edge auger .....
*No. 97—Seven foot feather edge auger .....
*No. 98—Eight foot feather edge auger .....
On augers specify diameter of twist.
*No. 200—Key for boxing with chain .....
No. 234C—Side gear .....

*Not carried in stock, factory shipment only.

Picks Mattocks Sledges Tongs
Bars Hammers Chisels Hoes

QuiKwerK

FINE FORGED TOOLS



The Guarantee

The Quikwerk Guarantee— satisfaction or replacement— is always given but seldom needed.

For nearest distributor see McRae's Blue Book

Construction Blacksmithing & Woodchoppers Tools
The Warren Tool & Forge Co. 264 Griswold St. Warren O.

Confidence
It means something to a merchant to sell tools branded "Quikwerk." It means, among other things, customer-confidence.
Keep a good stock of Quikwerks — they'll keep good customers for you.
QuiKwerK
Fine Forged Tools

Raise *the* Kiddies *on* Wheels

April Toy Market
Hotel Morrison, Chicago

In center
The Popular
XRE Model
for Little Tots

Juvenile
Automobiles
Velocipedes
Hand Cars
Tricycles
Scooters

Juvenile—
Coaster Wagons
Steel Express Wagons
Doll Carriages
Pedal Bikes

American
THE LINE BEAUTIFUL

"Known Around the World"

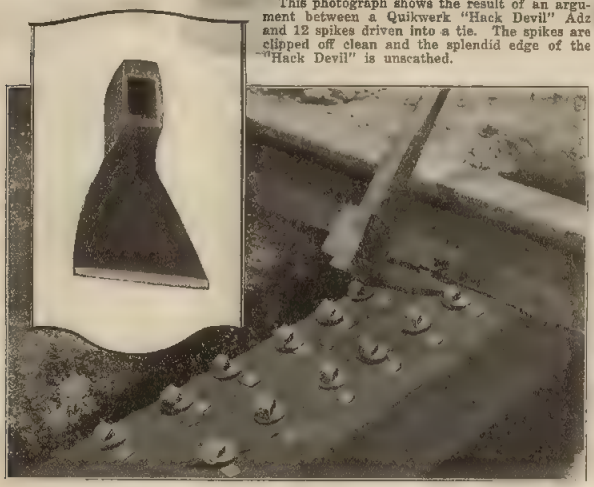
"WHAT'S in a name?" There's a lot in a name. Every boy is glad he is an American, and every such boy would a good deal rather own a vehicle bearing the name American.

See our salesman or jobber or write us for new catalog and price list.

The American-National Company
FOUR FACTORIES TOLEDO, OHIO, U S A

Say you saw it in GOOD HARDWARE

Worth Considering



This photograph shows the result of an argument between a Quikwerk "Hack Devil" Adz and 12 spikes driven into a tie. The spikes are clipped off clean and the splendid edge of the "Hack Devil" is unscathed.

It takes a good adz to argue with a rail or a spike. The Quikwerk "Hack Devil" Adz is forged from one piece of special steel, with a cutting edge that simply beats anything you ever heard of. It has the metal and temper that will hold that edge. It's precious little re-grinding that a "Hack Devil" needs Striking a rail or a spike takes a hunk out of an ordinary adz—but it usally means nothing in the life of a "Hack Devil" It will chip everything but itself,

(See page 3 for full description and prices.)

BOYS' HANDLED AXES

No. 2TA—Black head, deep finish, gold letters. Well shaped head. **Size 2**, same general description as large True American axe; 28 inch handle. Per dozen $22.00

No. 2BH—Polished bit, maroon head. Embossed label. **Size 2**, same general description as large Buck Horn axe; 28 inches handle. Per dozen.. 19.00

Weight, each, without handle about 2¼ pounds.

HUNTERS' AXES

True American.

Deep black finish. Gold letters. Well balanced and shaped to hand. A real hunter's axe. Hickory handles, well shaped and finished.

No. 0TA—Size 0; length handle 14 inches; weight each, about 1½ lbs. Per dozen.....$20.00

No. 1TA—Size 1; length handle 16 inches; weight each, about 2 lbs. Per dozen..... 20.50

Half dozen in a box.

True American Scout.

No. 5TA0—True American grade throughout; well shaped 14 inch hickory handle; good hang and nice to use; weight per dozen about 1½ lbs. **Per dozen (without sheaths)** $20.00

No. 5TA0S—Same axe as above **with sheaths; weight per** dozen about 1¾ lbs. Per dozen..... 26.00

Half dozen in a box.

SINGLE BIT BUCKHORN

Household.

Good quality crucible black steel blade. Perfect and uniformly punched eyes. Tempered and tested. Handled with No. 2, 19-inch quality handles.

Weights, lbs. 2¾

Michigan Pattern—Dozen. $24.00

One dozen in a box.

A Bull's Eye!

DEALERS everywhere recognize the profit-producing qualities of this new Daisy Display Rack at once. It combines a practical way of keeping Daisy Air Rifles up in full sight of the boys, with a sales "punch" that fairly coaxes the money out of the boy's pockets.

The heart-warming grin on the face of the "Happy Daisy Boy" is an instant reminder of our national advertising. This fall millions of boys and millions of parents will see this familiar figure, and read the inspiring story of fun and training with the Daisy.

We have enough of these displays to furnish one free to every dealer who handles Daisy Air Rifles. If you want one, send in your order for a trial assortment; or if you have already ordered from your jobber, write us and we will see that a display is sent you free.

This handsome combination gun rack and display sign is lithographed, in full life size, and brings out the boy in natural lifelike colors.

This is the trial order we suggest

	Cost	Sell for
Three No. 11	$4.00	$6.00
Three No. 12	3.00	4.50
Two No. 3	4.00	6.00
Two No. 30	3.34	5.00
Two No. 25	6.66	10.00
	$21.00	$31.50

DAISY MANUFACTURING COMPANY

Plymouth, Mich., U. S. A.

DAISY AIR RIFLES

The 1924 counter and window display for Northwind Fans-featuring the guarantee, the fan and the price.

Sells easily—stays sold

Selling a small fan is good business if complaints and adjustments do not eat up all the profits.

Northwind—"The best little fan"—sells easily. It stays sold—backed by a year's guarantee. Built by Emerson, leading fan manufacturer for 30 years.

An eight inch fan—"universal"—operating on 110 volts direct or alternating current — two speed switch—cord and plug—light mat brass finish—adjustable for wall or table use.

The 10-inch Northwind is the big brother of the family. An oscillator with three speed switch—cord and plug—adjustable for desk, table or wall. Blades in mat brass finish—base in dull black.

See Samples and Sales Helps. One hundred distributors. Write for name of nearest.

The Emerson Electric Mfg. Co.

2018 Washington Avenue

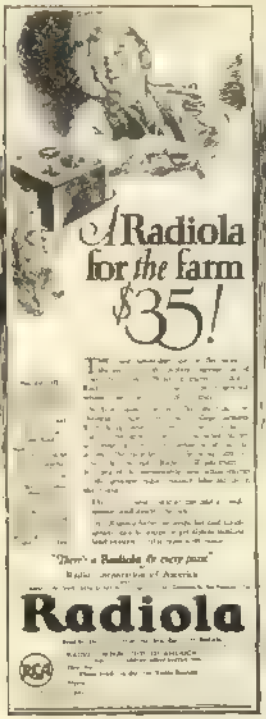
50 Church St.
New York City

Saint Louis, Mo.

Northwind

REG. U.S. PAT. OFF.

The best little *fan*



Radiola Ads Every Month

in

Country Gentleman
Capper's Farmer
Successful Farming
Farm Journal

in addition to the big campaign in the Saturday Evening Post and other important national magazines.

Have you ordered?

This ad runs in the April issue of the farm magazines. And it is but one in a steady monthly campaign of advertising to sell to the farmer not just radio—but RADIOLAS. And in particular the new Radiola III that exactly meets the farmer's needs—and purse! Orders are already outspeeding production. Have you sent in yours? If not, write us for the name of the distributor nearest you.

THERE'S A RADIOLA FOR EVERY PURSE

Radio Corporation of America
Dept. 603

Sales Offices:

233 Broadway, New York
10 So. La Salle Street, Chicago, Ill.
433 California Street, San Francisco, Cal.

Send for full descriptions of the complete new line of RADIOLAS. Also, the name of the distributor nearest you

RCA

This symbol of quality is your protection

Radiola

REG. U. S. PAT. OFF.

RCA

This symbol of quality is your protection

Will YOU make these sales of Radiola Regenoflex?

Radiola Regenoflex

A [illegible] Radiola [illegible] with [illegible] loud speaker. Will bring in WJZ, radiocasting the Radiola broadcasters' [illegible] has [illegible] antenna $141

Above is part of an ad addressed to the farmer direct — in farm papers — in addition to a great campaign in the big national magazines.

Are *you* getting the sales?

"There's a **Radiola** *for every purse"*

Radio Corporation of America

Sales Department—Suite No. 609

233 Broadway, New York | 10 So. La Salle St., Chicago, Ill. | 433 California St, San Francisco, Cal.

Radiola

REG. U.S. PAT. OFF.

STAPLE PULLERS

Utica Russel Staple Puller

Forged from high-grade steel, carefully tempered. Utica finish, with two prongs for pulling staples.

No. 1909—10 in. Weight dozen, 22 lbs.....Dozen $27 72

Utica Black Bull Staple Puller and Fence Plier

Forged from high-grade steel, tempered. Utica Finish Has three pulling points.

No. 1900—10 in. Weight dozen, 22 lbs. . .. ...Dozen $34 60

One in a carton, one-half dozen in a box

CARPENTERS' PINCERS

Solid Cast Steel, Polished Jaws

No. 50

LNGHT.	Wgt. Dozen	DOZEN
6 in.	6 lbs.	$7.50
8 in.	14 lbs	9.00
10 in.	18 lbs.	11.25
12 in.	22 lbs.	15 00

One-half dozen in a box.

PUNCHES

TICKET

All Steel, Nickel Plated

No. 11—Assorted dies. Wgt. dozen, 2 lbs.....Dozen $6.00

One-half dozen in a box.

Reservoir, size 5 in., made of sheet steel with tempered steel stripper and main spring, scored handles, nickel-plated finish, fancy dies.

No. 32—Weight per dozen, 2¼ lbs.....Dozen $6.00

One-half dozen in a box.

PUNCHES

TICKET

No. 9—Full polished and nickel plated. Assorted fancy dies. Can punch to 1½ in. from edge of card. Weight per dozen, 3 lbs.....Dozen $20.00

One-half dozen in a box.

No. 13—Full polished and nickel plated Assorted fancy dies. Can punch to ⅞ in. from edge of card Weight per dozen, 2½ lbs.....Dozen $15.00

One-half dozen in a box.

No. 6—Same style as No 9, but heavier. Can punch to 1⅛ in from edge of card. Polished, nickel plated, assorted fancy dies. Especially adapted for use of lumber mills.....Dozen $30.00

One-half dozen in a box

SADDLERS' OR BELT—POLISHED STEEL

Sizes of Oval Punches.

Standard Sizes

NO.	Diameter Round Hole	Wgt. Dozen	No. 100 ROUND DOZEN	No. 12 OVAL DOZEN
1	1/16 in.	½ lb.	$4.00	$. ..
2	1/8 in.	½ lb.	4.00	.
3	3/16 in.	⅝ lb.	4.00	. .. .
4	1/4 in.	¾ lb.	4.00	. ..
5	5/16 in.	⅞ lb.	4.00	..
6	3/8 in.	1 lb.	4.00	10.00
7	7/16 in.	1½ lbs	4.50	10.00
8	1/2 in.	1½ lbs.	4.50	10 00
9	9/16 in.	1⅝ lbs.	4.50	10 00
10	5/8 in.	1⅝ lbs.	5.00	10 00
12	3/4 in.	2 lbs.	5.00	

One dozen in a box.

RAIL WELDING & BONDING CO.

CLEVELAND, OHIO

Electric Welding Machines Welding Electrodes

UNA RAIL BONDS

The UNA Bonding Process

In the UNA Bonding Process the electric arc from either a dynamotor or light resistance welder of sufficient capacity is used. The UNA Bond is all copper throughout. The copper bond head is placed in a mold and held against the rail. An arc is struck with the UNA metal electrode. The heat of the arc melts the electrode. When the mold is full, the weld is complete.

UNA Metal

The UNA metal electrode used makes the weld positive, almost automatic. UNA metal is a copper alloy. As the UNA metal melts into the mold the elements in the alloy react with the rust and scale on the rail, forming a slag which floats off. This leaves a clean surface of steel exposed to the molten copper. Under these conditions the weld is formed.

Copper Weld Positive

As the operator fills up the mold, he can actually see the copper welding to the rail. He knows that he is getting a good weld.

No Grinding of Rail

The UNA process eliminates the extra expense of grinding the rail before applying the bond. The heavy rust and scale is quickly removed by means of a stiff wire brush and the rail is ready for bonding.

UNA Welded Bond Head Strong

Figure 1 shows a welded UNA Bond Head removed from the rail. The metal, tough and ductile, is very resistant to sudden blows and shocks. It requires a direct shear of over 32,000 pounds force to remove the welded head from the rail. Even then, as shown in the photograph, the shear took place through the bond head, leaving the weld between the copper and steel intact.

Each Bond Strand Welded Into Bond Head

As the mold fills up with molten copper the arc melts back each layer of bond strands, permanently welding and sealing each strand into the weld. In this way each bond strand carries its full load so that the full carrying capacity of the bond is realized.

Large Area of Contact

As shown in Figure 1 the area of contact of the copper to rail weld is from four to six times the cross-sectional area of the bond. This allows a large factor of safety and is another reason for the excellent electrical characteristics of the UNA bond.

Fig 1

Low Cost

The UNA bonding process is rapid. Thirty-five seconds of actual welding time applies one head of a 4/0 bond. This allows the operator to apply a large number of bonds per day. It reduces to a minimum the cost of the applied bond, the real answer to the cost of bonding.

Maximum Electrical Conductivity

As shown in Figure 2 the applied UNA bond forms a continuous path of copper from rail to rail giving the full carrying capacity of the bond.

Standard UNA Bonds

The type CBA bond shown in Figure 2 is made in long lengths to apply around fish plates. It is furnished in any length or capacity desired. The UNA bond is also made in other types to apply to the head of the rail.

Send for UNA Bonding Bulletin No. 105.

Fig. 2. Type CBA, **UNA** Bond Welded to the Rails

L. B. FOSTER COMPANY, Inc.

General Offices
PITTSBURGH, PA.
Park Building.

NEW YORK OFFICE
154 Nassau St.

Warehouses
Pittsburgh Philadelphia Jersey City Hamilton, O. Baltimore

RAILS—New and Relaying; Track Equipment

Products

Rails — New and Relaying; Track equipment; Frogs; Switches; Splice Bars; Bolts; Nuts; Spikes; Tie Plates; Rail Braces; Pipe; Rail Timbers for Mine Shoring.

Rails cut and drilled to meet any specification.

Less than carload orders given special attention.

Slogan

Rails—New and Relaying—1 ton or 1,000.

Guarantee

Every Rail and Accessory Foster ships is rigidly examined by experienced Inspectors and goes out with an absolutely unconditional guarantee, as follows:

QUALITY—Relaying Rails or Used Rails must be Strictly First Class in every respect, Standard Mill Lengths, Uniform in section, height and drilling, free from surface bends, breaks, kinks or other deformations, show comparatively little wear and have Angle Bars of like good quality to match—all suitable in every way for construction of first class trackage.

INSPECTION—Purchaser has option of making inspection and selection during loading—OR:

Foster ships subject to inspection and approval of your superintendent or railroad supervisor at destination, with the following guarantee:

GUARANTEE—Material must be as represented, otherwise Foster will take back at their own expense and replace, if desired.

The Foster Guarantee is absolute insurance that you will receive first class equipment in first class condition, at a saving of from 30% to 50%.

Relaying Rails and Accessories

In stock and at various points throughout the United States we have thousands of tons—all sizes—Strictly First Class Relaying or Used Rails with the Accessories to match. We specialize in this material and can therefore save you from 30% to 50%. Rails are invariably inspected prior to and during loading by our Inspectors who have had years of experience as Railroaders and Track Builders.

New Rails and Accessories

Purchasing large tonnages of New Rails and Track Accessories from various Mills throughout the country enables us to quote manufacturers' prices—and frequently less.

Rail Splices—New and Reconditioned

For years we have made a specialty of supplying Splice Bars, Angle and Plain, in any quantity guaranteed to fit all sections no matter how old or how modern the Rail. We have the patterns for all drillings and sections, sizes 8-lb. to 125-lb. Can furnish with or without Bolts. To secure accurate fit, send by express a sample of Bar or template.

We make Combination Splices to connect Rail sections of different height and drilling.

Frogs and Switches

We manufacture all kinds of regular and industrial track work for Steam and Electric Railroads, Mines, Contractors, Quarries and Logging Railroads; Portable Track.

Track Accessories

Bolts, Nuts, Spikes, Tie Plates, Rail Braces, Car Movers, Rail Benders, Rail Forks, Rail Tongs, and Drills and Saws, in any size and quantity.

Special Fabricated Rails

We specialize in cut-to-length rails for reinforced concrete work, furnace buckstays, for structural and building work, and for other special purposes.

Rails—new or relaying—cut to lengths, drilled for bonding, and special drilling, curved or bent, for special work.

Rail Timbers for Mine Shoring

For supporting, or shoring the roofs of coal and other types of mines, we carry large stocks of second grade rails which can be used more economically and effectively than wood timbers.

Facilities

Foster plants and warehouses, equipped with the most modern machinery for drilling, and cutting rails for any purpose whatsoever, are strategically located at Pittsburgh, Pa., Philadelphia, Pa., Jersey City, N. J., and Hamilton, Ohio; this insures very prompt service and minimum freight haulage.

REACH CATCHERS' MASKS AND SHOE PLATES.

No. JP—The Newest and Best Professional Mask Made. The frame is made of one solid piece of light weight, special composition metal. Fitted with the Reach Special Full Length face padding, which are strapped to the frame and can be removed or adjusted as required. Each, $19.50

No. 6W Professional Model. Finest tempered steel wire, double frame construction with "spitter" and open vision features. Sides extended to protect ears. Adjustable pads laced to mask. Adjustable head straps. Strongest mask made. Each, $9.40

No. SL—"Spitter". Heavy tempered steel wire with reinforced joints. Extended sides, adjustable laced pads and head straps, a combination of strength and moderate weight. Each, $8.00

No. 400—Diamond Special Model. Heavy steel wire. Built to embody superior strength with the "spitter" and open vision features, adjustable pads and head straps. Each, $6.60

No. 20S—Club Special. Made of tempered steel wire, reinforced joints, open vision feature, adjustable leather pads and head straps, removable transparent sun shade. Each, $6.00

No. 30S—Association. Extra strength steel wire, welded joints, open vision model, removable sun shade, adjustable pads and head strap. Each, $5.40

No. 40S—League. Strong steel wire, open vision model, removable sun shade, leather pads and adjustable head straps. Each, $3.80

No. XX—Amateur. Made of black enameled steel wire, leather face and chin pads, adjustable head straps. Each, $3.20

No. 3M—Youths' Model. Black enameled steel wire, leather face pads and adjustable head strap. Each, $2.70

No. CM Boy's Special. Made of gun metal finished steel wire, leather face pads, adjustable head strap. Each, $2.00

REACH SHOE PLATES.

Made on practical models of strong, light weight steel, which will not bend or break. Complete with screws for attaching to shoes.

No. 1T—Special Toe Plates. Hand forged, tempered steel, beveled edge and points. Per Pair, $0.68

No. 2T League Toe Plates. Best quality forged steel, sharpened points. Per Pair, $0.34

No. 6T—Amateur Toe Plates. Good quality stamped steel, ground points. Per Pair, $0.20

No. 5T—Professional Pitchers' Toe Plates. Made of Aluminum; worn on toe of shoe. For right shoe. Each, $0.50

No. 1H—Special Heel Plates. Hand forged, tempered steel, beveled edge and points. Per Pair, $0.68

No. 2H—League Heel Plates. Best quality forged steel, sharpened points. Per Pair, $0.34

No. 6H—Amateur Heel Plates. Good quality stamped steel, ground points. Per Pair, $0.20

BASEMEN'S MITTS

REACH

Standard professional model. Choice oiled horse hide, glove leather lining, rolled leather binding, hand-made, felt padding, laced around entire edge, strap and buckle at wrist, trap thumb lacing, has all features necessary to a good mitt.

Each

No. 4X -Weight each ¾ lb $4.00

One in a box.

Good quality mahogany horse hide leather, laced edge, trap thumb lacing, hinge padding, strap and buckle wrist.

Each

No. R—Weight each ¾ lb. $3.00

One in a box

Made entirely of pearl horsehide, laced edge, strap and buckle at wrist, correctly padded.

Each

No. XR—Medium size. Weight each 11 oz.....$2.00

One in a box

LEATHER PRESERVER

REACH DOLCE

A special preparation for use on mitts or gloves

Made of natural animal oils which actually soften and preserve the leather.

Per tube

Dolce—In tubes, weight per dozen 1¾ lbs $0.15

One dozen in a box.

FIELDERS' GLOVES

REACH

Professional model, finest selected Reaco oil treated horsehide leather, special pearl glove leather lining, padding individually made for and fitted in each glove to form catching pocket, trap lacing, all seams leather welted, patent diverted type seams, laced wrist, rolled leather binding, no breaking in required.

Each

No. E. C. A. -Eddie Collins model, regulation size, weight each 12 oz.....$8.50

One in a box

Professional model, choice oil dressed horsehide with glove leather lining, medium length fingers and wide, deep pocket, hand-fitted padding, leather welted, diverted seams, trap lacing at thumb, laced wrist.

Each

No. EX—Chic Galloway model, weight each 10 oz $6.00

One in a box.

Professional model, best grade Reaco golden grain horsehide leather, glove leather lining, leather welted diverted seams, hand formed padding, laced wrist, wide deep pocket, full padded little finger, adjustable thumb lacing

Each

No. 02—Pat Duncan model, weight each 8 oz.....$5.00

One in a box

Professional model, Reaco oil treated brown horsehide, glove leather lining, lacing adjustment between thumb and first finger, leather welted seams and rolled leather binding, laced wrist, with deep natural pocket, a satisfactory glove in every detail.

Each

No. 01-R—Right hand $5.00
No. 01-L—Left hand 5.00

Weight each 9 oz.

One in a box

NOTE—Unless specified we always send mitts and gloves for left hand

FIELDERS' GLOVES
REACH

Special smooth grain pearl horse hide leather, leather lined, all seams leather welted, laced at wrist, light padding in palm, medium padding in heel forming deep pocket.

	Each
No. 2L-R—Right hand	$4.00
No. 2L-L—Left hand	4.00

Weight each 8 oz.

One in a box.

Dark brown grain horse hide leather, full leather lining, welted seams, roll leather binding, laced wrist to allow change of padding, wide little finger model, deep pocket.

	Each
No. 2GL-R—Right hand	$3.00
No. 2GL-L—Left hand	3.00

Weight each 8 oz.

One in a box.

Mahogany horse hide leather, full leather lining, laced wrist permits adjustment of padding. A duplicate of the Regulation Professional model

	Each
No. 10G-R—Right hand	$2.00
No. 10G-L—Left hand	2.00

Weight each 7 oz.

One in a box.

Genuine cream horse hide leather, felt palm padding, leather palm lining.

Each

No. 53—Large size youths' model, weight each 6 oz. $1.50

One in a box.

FIELDERS' GLOVES
REACH

Cream horse hide leather, khaki lined with leather palm, medium padded heel, deep pocket.

Each

No. 4G—Youths' size, wt. ea. 4 oz. $1.00

One in a box.

Brown horse hide leather, felt lined palm with padded heel, outseam model, strong and practical.

Each

No. 24 Boys' size, wt. each 3 oz. $0.50

Six in a box.

CATCHERS' BODY PROTECTORS
REACH

Khaki canvas, leather bound, well padded extension over shoulder, adjustable strap.

Each

No. 86—Weight each 4 lbs. $7.50

One in a box.

Khaki canvas, leather bound, well padded, padded extension over shoulders.

Each

No. 84—Weight each 2 lbs. $4.00

One in a box.

Khaki canvas, well padded, bound edge, adjustable strap.

Each

No. 83—Weight each 1 1/16 lbs. $2.50

One in a box.

Note—Unless specified we always send mitts for left hand.

Laura La Plante and Reginald Denny hastily bidding each other adieu in a dramatic moment from Universal-Jewel's "The Fast Worker," soon to be released.

New Casts Announced by Lasky

Coming Productions to Have Unusually Strong Personel

WILLIAM DE MILLE has engaged one of the strongest casts of recent film productions for "Locked Doors," Clara Beranger's story, which he will produce as his next Paramount picture. The cast was announced recently by Jesse L. Lasky Betty Compson, Theodore Vonelta, Robert Edeson, Theodore Roberts and Kathlyn Williams are the principal players in the production. Mr. de Mille will begin actual filming of this production in about a week.

Constance Bennett, who recently made such an impression with her work in "Cytherea" and "What's Wrong with the Woman," has been signed to play the leading feminine role in Zane Grey's "Code of the West," which William Howard will direct for Paramount according to an announcement made by Jesse L. Lasky. Constance Bennett, who is the daughter of Richard Bennett, was trained for a career as a dancer and has been unusually successful She arrived in Hollywood September 16. Production of "Code of the West" began September 22 upon the location selected by Zane Grey himself.

Wallace Beery, one of the screen's foremost character actors will appear in a strong role in Victor Fleming's forthcoming production for Paramount, "The River Boat," Mr. Lasky announces "The River Boat" is a story of the California gold rush of '49. It was suggested by an original story written by Charles E. Whittaker. Wallace Beery leaped into fame some years ago as a German submarine commander in "Behind the Door." His work in "Robin Hood," Pola Negri's "The Spanish Dancer," "The Four Horsemen of the Apocalypse," "The Sea Hawk," and many other important productions has made him one of the out standing figures of the silver screen.

The Prince of Wales and Jerry Fraenkel, International News cameraman, and a "camera review" arranged with the Prince.

PATHE LAUNCHES NEW SERIAL

The announcement of the release of the last chapter of the Patheserial "Into the Net" is followed closely by word from the Pathe organization to the effect that it will launch early in October the initial episode of its latest chapter production entitled "Ten Scars Make a Man"

The story was especially written for the screen by Philip Barry.

C. W. Patton, producer of this serial, displayed keen judgment in his choosing of the cast for this production, which is headed by Allene Ray.

* * *

SCHULBERG ANNOUNCES NEW PICTURES

B. P. Schulberg announced this week the order in which he will produce the nine Preferred Pictures to be released during 1924-25.

With "The Breath of Scandal" completed and ready for release, work has already started on the next Gasnier production, "The Triflers."

Third on the Schulberg program will be the Belasco play, "The Boomerang," by Winchell Smith and Victor Mapes. It is a toss-up between George Agnew Chamberlain's "White Man" and Royal A. Baker's "When a Woman Reaches Forty" for the fourth place on the schedule.

However, "Faint Perfume" by Zona Gale and "My Lady's Lips" by Eve Unsell, will be sixth and seventh. Another will be a production based on the song, "The Mansion of Aching Hearts" by Harry Von Tilzer and Arthur J. Lamb.

"Frivolity," an original screen story by Larry Evans, will complete this year's allotment of Preferred Pictures.

* * *

WARNERS' NEW PICTURES BOOKED ON BROADWAY

The first of the Warner Bros, 1924-25 product is about to break on Broadway. Through the Apollo Exchange, Inc, distributors of the Warner Bros. product for New York state and Northern New Jersey, Ernst Lubitsch's "Three Women" has been booked to open at the Strand early in October with Rin-Tin-Tin in "Find Your Man" playing B. F. Keith's Broadway theatre

Both of these initial New York bookings have been given special consideration both by the Warner interests and the exhibitors who are on the other side of the contract with the result that the Warner season on Broadway ought to open with a bang.

'BREATH OF SCANDAL' READY FOR RELEASE

"The wise exhibitor looks for three elements in a picture he wants to sell his patrons," is the opinion expressed by J. G. Bachmann who heads the distributing office of B. P. Schulberg Productions which will release nine Preferred Pictures during the new season.

"A story with advertising value, a good box-office title and a cast of players the fans know are the requisites which the real showman seeks in booking an attraction for his house," Mr Bachmann continues. "These are ideally supplied in 'The Breath of Scandal,' Mr. Schulberg's new Gasnier production which is now ready for release.

"When he purchased this story by Edwin Balmer, not only were we impressed with the drama furnished by the plot but we also took into consideration the fact that its wide circulation would be a tremendous aid to theaterowners who exploited it.

* * *

'PETER PAN' TO BE MADE IN COAST STUDIOS

"Peter Pan" will be made in the Paramount West Coast studio, Jesse L. Lasky, first vice president in charge of production of Famous Players-Lasky Corporation has announced. Earlier plans called for the making of the picture in the company's Long Island studio.

Production will start immediately after the return to Hollywood of Herbert Brenon, who recently sailed from England following extended conferences with Sir James M. Barrie. Willis Goldbeck, the scenarist, is returning with him.

* * *

THREE RELEASES FOR WARNER DISTRIBUTORS

Warner Bros. distributors throughout the country are receiving the first three releases of the 1924-25 product which are Ernst Lubitsch's "Three Women," Rin Tin-Tin in "Find Your Man," and Monte Blue and Marie Prevost in "The Lover of Camille"

Each one of these first three has so much special "kick" from the exhibitor's standpoint that playdates throughout the country have already been set through the various distributors.

* * *

'BUCK' JONES STARTS ANOTHER FOR FOX

Following the completion of "Winner Take All," the screen version of Larry Evan's story, "Buck" Jones has started production on his next picture at the William Fox West Coast Studios. It is "The Man Who Played Square," a story by William Wallace Cook. Al Santell is directing the western star in his latest picture.

Wanda Hawley has been signed for the leading feminine role. Ben Hendricks, Jr., is cast as the heavy.

* * *

PARAMOUNT STARTS MEXICAN DRIVE

A special two months drive for Paramount pictures, the first of its kind to be held in Mexico, was begun September 1, according to an announcement received by Joseph H Seidelman, assistant manager of the foreign department of the Famous Players Lasky Corporation. The campaign is being conducted by William C. Winship and his staff from the Paramount offices in Mexico City. Some of the most important of recent Paramount successes will be released during the celebration.

ALICE JOYCE RETURNS TO SCREEN

There's good news for the motion picture industry in the announcement just made by D. P Schulberg, producer of Preferred Pictures that Alice Joyce will return to the screen. She has already packed a dozen trunks and left New York for Hollywood where her first Schulberg picture, "White Man," from George Agnew Chamberlain's novel is to be started this week.

Although young in years, Alice Joyce pioneered in making motion pictures as leading player for Kalen and Vitagraph. Her early successes under these auspices included "The Third Degree," "Within the Law," "Her Lord and Master," and "The Sporting Duchess."

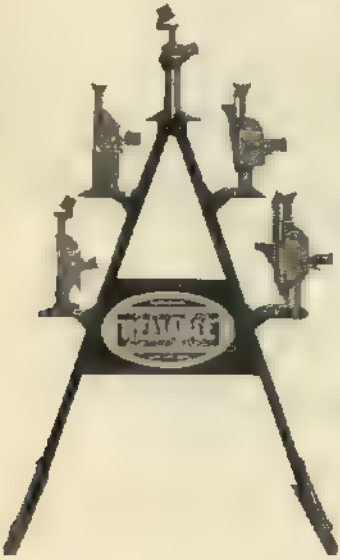
* * *

THREE FOR WARNER

Warner Bros. have determined the location of three links in their Key City chain

Flora Le Breton, whose dramatic abilities displayed in Cranfield and Clark's recent production, "A Soul's Awakening," assure British pictures a better reception, according to the opinion of America's trade critics who recently reviewed this production.

Make sales while your back is turned



Here is the way to make sales to the two or three customers who are always waiting to be served:—

Put this handsome Reliable Jack Seller in the front part of your store where your customers will see it. And then watch the bright red Reliable Jacks attract their attention and open their pocket-books!

You'll have lots of jack sales to ring up after these waiting customers have picked out the jacks they want.

Don't let these extra sales and extra profits slip by you. We will send you this Reliable Jack Seller free with an order for only 12 Reliables—a standard assortment of fast sellers.

Write for yours now. Just give your name and your jobber's and we will send the Jack Seller at once.

The Reliable Jack Seller will be sent free upon receipt of an order for a standard assortment of 12 Reliable Jacks, consisting of 1 of the following: No. 8 Pressed Steel Jacks, 2 each of the No. 5 A Ball Bearing Jack, the No. 10 Jack with flip cup, the No. 11 Jack with drop handle and the number 46 Jack with adjustable foot.

Order One Now!

ELITE MANUFACTURING COMPANY

Dept. GH-4, Ashland, Ohio

NORTHWEST BRANCH—
G. A. Ashton Co., St. Paul, Minn.
(Complete stock carried in Ashton Building)

SOUTHWEST BRANCH—
Carroll & Company Dallas, Texas.
(Complete stock carried in Carroll Warehouse)

REPRESENTATIVES:
Motor Products Co., 149 Church St., New York
L. E. Spencer Co., 704 Stahlman Bldg., Nashville, Tenn.
A. E. Mohrig, 1454 Pine St., San Francisco, Cal.

RELIABLE JACKS

Patent Applied For

More Sales and Greater Profits in Large Presses

Made to meet the big and increasing demand for larger home fruit presses at moderate prices, Drednaughts have set a new record both in service and in sales.

Drednaught construction, of steel riveted frame and malleable iron bolted yoke, makes a press you'll have "no comeback" on.

The most convenient and serviceable press you can offer your trade.

Write for detailed description, prices and terms.

DREDNAUGHT FRUIT PRESSES

	Height	Weight	Capacity
No. 1	35 in.	75 lbs.	½ Bushel
No. 2	40 in.	100 lbs.	1 Bushel approx.
No. 4..	46 in.	150 lbs.	1¼ Bushels
No. 5..	50 in.	230 lbs.	2¾ Bushels

Drednaught Presses are shipped assembled, ready to use. They are handsomely finished. Now ready for immediate delivery.

DREDNAUGHT FRUIT PRESSES

Manufactured only by

M. J. BROWN MANUFACTURING CO.

2671 Salmon Street, Philadelphia

THE BROWNEE FRUIT PRESS

The handiest small press on the market Strong, durable. Weight 11 lbs Height, 14 ins No iron parts in contact with fruit.

Tub of selected oak Base of acid resisting aluminum, other metal parts nickeled

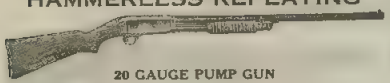
Made to meet the demand for a low price, but efficient table press.

Write for price and terms.

SHOTGUNS

Remington UMC

HAMMERLESS REPEATING



20 GAUGE PUMP GUN

This gun embodies several features which have never before been available in a shotgun of this type and gauge. In easy graceful outline and perfect balance it resembles the Remington 12 gauge repeating shotgun which has been popular with sportsmen for so many years. It has the same solid breech hammerless, and safety features and also loads and ejects from the bottom, the empty shell being thrown straight down.

ACTION—Pump action, operated by sliding forearm. Working parts are so designed and balanced that the operation is extremely smooth and easy.

TAKE-DOWN—A knurled cap at the forward end of the magazine tube is rotated a turn or two, permitting the instant removal of the barrel as a separate unit. No tools are necessary, and interchange of barrels is consequently very simple, as forearm and magazine remain attached to receiver.

SAFETY—Cross-bolt located at the rear of the trigger guard. Safety button, when on safe sticks out on right side enough to interfere with shooters' trigger finger, thereby affording a dependable indicator.

LOADING—Shells are inserted in the magazine from the bottom. The magazine holds four shells, which with one in the chamber, gives a capacity of five shots without reloading.

AMMUNITION—Chambered for 2¾ inch shells. 2½ inch shells can be used.

BARREL—Remington steel, full choke, modified choke or cylinder bore.

STOCK—American walnut with properly shaped pistol grip. Length of stock 13¾ inches. Drop at heel 2⅝ inches. Drop at comb 1 9-16 inches.

No. 17A—20-gauge, 26 or 28-inch barrel. Each..$52.50
Weight about 5½ pounds.

HAMMERLESS AUTOLOADING

MODEL NO. 11, TAKE-DOWN

Here is a single trigger repeater that ejects the empty and loads the fresh shell, cocks the hammer, closes and locks the barrel by simply pulling the trigger. And does it surely and with a positive action. The recoil is used to operate the gun. You are not jolted out of position, a big factor in fast shooting.

Dependability of Operation a Remington-UMC Feature.

The ease and surety of operation that distinguish Remington-UMC autoloading shotguns are due to the Remington-UMC autoloading principle—admitted by experts to be in a class by itself.

It handles empties and loaded shells with precision and certain force.

Barrel and breech-bolt are locked together. The recoil moves the friction piece along the magazine and cocks the hammer. When at the full limit of movement, the carrier dog engages the operating slide.

The recoil spring then moves the barrel forward, unlocking and opening the breech and ejecting the empty.

The carrier latch is tripped by a shell from the magazine, which is then inserted into the chamber, the breech closed and locked—and ready for another shot.

It's a long process to describe—but it works as fast as you can pull the trigger.

Safety Devices That Really Do Mean Safety.

Three methods of protecting Remington-UMC autoloading shotguns against premature discharge—and every one of them works.

One—When the barrel recoils backward (the breech closed and locked) the link prevents the hammer coming in contact with the firing pin until the loaded shell is fully inserted and the breech again closed and locked.

Two—At the first opening movement of the breech, the firing pin is withdrawn by the locking-block and cannot touch the primer until the gun is really ready for firing.

Three—Before the breech is unlocked, the safety sear engages the trigger, making it impossible to snap the hammer before the breech is closed and locked.

The Breech Bolt.

The breech bolt is rigidly locked by an unusually strong locking-block. The proximity of this block to the head of the shell decreases the spring in the breech, and hence there is no possibility of the head of the shell being ruptured by the discharge.

A Safety Catch.

A safety catch conveniently located in the trigger-guard where it cannot be moved accidentally, securely locks the trigger, and as the trigger is also the sear, there is no possibility of the shell being discharged by a jar. Then, too, the trigger is so balanced that it cannot be jarred off even when not locked.

The top of the receiver is finely matted, which is of great assistance in taking quick, accurate aim.

Standard Grade, Five Shots.

Barrel—Remington steel, full choke.

Stock—Half pistol grip stock of American walnut, length 14 inches, drop at comb 1⅝ inches, drop at heel 2½ inches.

Weight—About 8¼ pounds.

No. 11A—12 gauge, 28-inch barrel. Each.....$62.15

No. 11AR—With raised solid rib, otherwise same as above. Each $71.75
One in a box.

Special Grade, Five Shots.

Same stock dimensions as No. 11A standard grade. Half pistol grip stock and forearm are of selected imported walnut, neatly checkered.

No. 11B—12 gauge, 28-inch barrel. Each.....$90.00

No. 11BR—With raised solid rib otherwise same as above. Each..... 99.60

SHOTGUNS

Remington UMC

HAMMERLESS REPEATING

MODEL NO. 10, TAKE-DOWN, PUMP ACTION

Trap Special Grade, Six Shots.

A six-shot repeater designed especially for trapshooting purposes. This grade differs from No. 10C Trap in that the stock and forearm are American walnut, the stock being furnished in but one dimension, which is 14 inches in length, drop 2 inches at heel, and 1½ inches at comb. The majority of trapshooters have found these dimensions to be the best adapted for trapshooting purposes. The top surface of barrel is neatly matted its entire length, which prevents the reflection of light that might interfere with the shooter's sighting. It also aids in taking quick and accurate aim.

No. 10S—12 gauge, 30-inch barrel. Each.....$62.50

One in a box.

Trap Grade, Six Shots.

A six-shot repeater designed especially for trapshooting purposes

Barrel—Remington steel, full choke.

Stock—Straight grip stock and forearm are of selected curly imported walnut, and are neatly checked. Length 14 inches, drop at comb 1½ inches, drop at heel 2 inches.

Weight—About 7½ pounds.

‡**No. 10C—12 gauge, 30-inch barrel.** Each. ..$85.00

One in a box.

Tournament Grade, Six Shots.

*Made to order only.

Barrel—Remington steel, any desired choke. The receiver and barrel are finished in a rich scroll, hand engraved.

Stock—Stock and forearm are of specially selected imported walnut neatly finished by hand with attractive checkering. All working parts are hand polished. Grip and stock dimensions optional.

‡**No. 10D—12 gauge,** 26, 28, 30 or 32-inch barrel.
Each $150.00

One in a box.

*Can be furnished in dimensions same as No. 10A within two or three days. Other dimensions require five to six weeks.

Expert Grade, Six Shots.

*Made to order only.

Barrel—Remington steel, any desired choke. The barrel and receiver are finished with a beautiful deep scroll, hand engraved, with panel on left side of receiver.

Stock—Stock and forearm are of the choicest imported walnut, handsomely checkered by hand, silver name-plate inlaid in stock. All working parts are hand polished. Grip and stock dimensions optional.

Weight—About 7½ pounds.

‡**No. 10E—12 gauge, 26, 28, 30 or 32-inch barrel.**
Each $225.00

One in a box.

Premier Grade, Six Shots.

*Made to order only.

This grade is a work of art, no effort being spared to produce the finest gun, both in workmanship and finish that it is possible for a factory to turn out.

The receiver and barrel are finished in a beautiful deep scroll, hand engraved, which brings out the game panels in relief. Owner's initials engraved on name-plate if so desired. Grip and stock dimensions optional.

‡**No. 10F—12 gauge, 26, 28, 30 or 32-inch barrel.**
Each $300.00

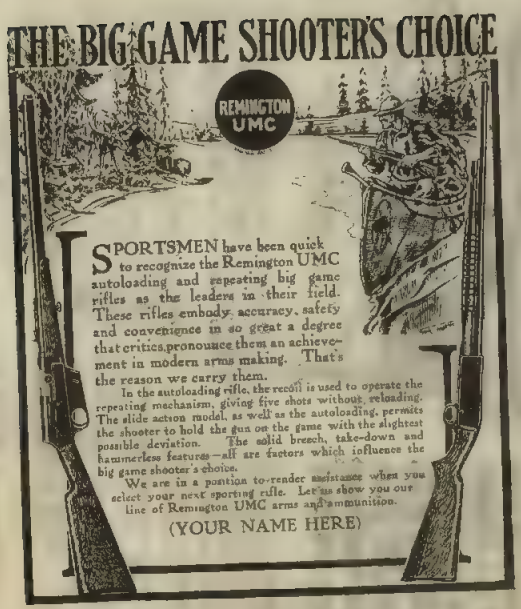
One in a box.

*Can be furnished in dimensions same as No. 10A standard grade within two or three days. Other dimensions require six to eight weeks.

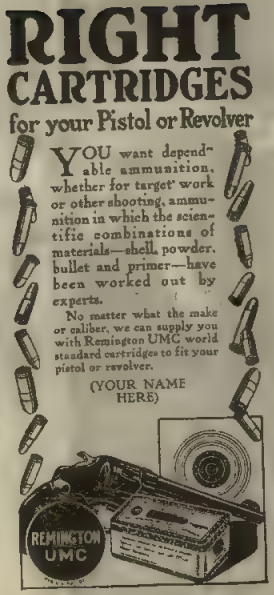
Extras for Model No. 10 Gun.

‡**Raised solid rib full length of barrel.** Extra....$9.60
‡**Ordnance steel barrel instead of Remington steel.**
Extra 9.60

Note—In all cases extra barrels will have to be fitted at the factory.


THE BIG GAME SHOOTER'S CHOICE
REMINGTON UMC
SPORTSMEN have been quick to recognize the Remington UMC autoloading and repeating big game rifles as the leaders in their field. These rifles embody accuracy, safety and convenience in so great a degree that critics pronounce them an achievement in modern arms making. That's the reason we carry them.
In the autoloading rifle, the recoil is used to operate the repeating mechanism, giving five shots without reloading. The slide action model, as well as the autoloading, permits the shooter to hold the gun on the game with the slightest possible deviation. The solid breech, take-down and hammerless features—all are factors which influence the big game shooter's choice.
We are in a position to render assistance when you select your next sporting rifle. Let us show you our line of Remington UMC arms and ammunition.
(YOUR NAME HERE)

No. R22.


RIGHT CARTRIDGES
for your Pistol or Revolver
YOU want dependable ammunition, whether for target work or other shooting, ammunition in which the scientific combinations of materials—shell, powder, bullet and primer—have been worked out by experts.
No matter what the make or caliber, we can supply you with Remington UMC world standard cartridges to fit your pistol or revolver.
(YOUR NAME HERE)
REMINGTON UMC

No. R20.

WRING
1 CLOTHES GET FIRST WASHING IN WARM SUDS
2 SECOND WASHING IN SCALDING SUDS REMOVES LAST TRACE OF DIRT
3 INTO THE BASKET—FRESH CLEAN AND WHITE WITHOUT BOILING OR HAND RUBBING
4 INTO RINSING AND BLUEING TUB—(ALWAYS ANOTHER TUB FULL RIGHT BEHIND)
RINSE
WRING
THE LINE
DEXTER
MODEL 12 E

Come in and let us *show* you how the DEXTER *Double Tub* cuts washing time in two

Furnished Complete With Electric Motor Or For Use With Gasoline Engine

WHEN you come in to see the Dexter Double Tub we'll have more than a washing machine to show you—we'll show you A BETTER WASHING PLAN. You will be interested in its mechanical construction, of course; you want to know that it is well-built, that it looks well, that it will stand up and do its work month after month and year after year.

BUT YOU WANT MORE THAN THAT IN THE MACHINE YOU BUY—you want to know that it washes the clothes clean, in the quickest possible time, and with the greatest possible saving of labor and energy.

You get a better washing principle in the Dexter Double Tub—the shortest possible route between hamper and line. The two tubs, each equipped with complete washing gearing, actually "cut washing time in two."

But we can show you more about the good points of the Dexter Double Tub and the Dexter washing principle in a fifteen minute demonstration than we could tell you in hours of talk. Come in and let us show you. No obligation.

BIG FREE DEMONSTRATION

(Dealer's Name Here--Date and Place)

Newspaper Ad No. 14—3 columns x 8 inches

GAME TRAPS

VICTOR

The Victor is the quality Trap, used everywhere and absolutely dependable

No. 0—Victor; for rat, gopher, weasel, etc; spread of jaws 3½ inches, weight per dozen, 6¼ lbs .... Per Dozen, $2 40
55 dozen in a barrel

No. 1—Victor; for muskrat, skunk, opossum, etc.; spread of jaws 4 inches; weight per dozen, 7¼ lbs. .Per Dozen, $3 06
40 dozen in a barrel

No. 1½—Victor; for mink, skunk, raccoon, muskrat, etc , spread of jaws 1⅞ inches; weight per dozen, 10½ lbs
Per Dozen, $4 88
25 dozen in a barrel

No. 2—Victor; for fox, raccoon, fisher, etc.; spread of jaws 4⅝ inches; weight per dozen, 13¼ lbs.. .....Per Dozen, $6 72
15 dozen in a barrel

No. 3—Victor; for coyote, fisher, fox, badger, etc.; spread of jaws 5¼ inches; weight per dozen, 21½ lbs.Per Dozen, $10 98
10 dozen in a barrel.

No. 4—Victor; for lynx, coyote, badger, etc., spread of jaws 5⅞ inches; weight per dozen, 24¼ lbs.....Per Dozen, $13 42
9 dozen in a barrel

VICTOR DOUBLE SHOT

The moment the jaws are firmly closed on the animals foot a heavy striker bar is released and hits the animal a staggering blow, doubling him down so that escape is impossible Trap has guaranteed unbreakable independent coil springs, new style teeth similar to a lobsters claw and adjustable action on striker bar Easy to set and is low and flat.

Nos.	2	2½
Spread of Jaws, inches	4	4
Weight per dozen, lbs	14	17
Dozen in case	11	10
Per Dozen	$7 50	9 00

No. 2 is for Muskrats, No. 2½ for Raccoons, Mink, Skunk, etc. May also be used for Muskrats

ONEIDA JUMP

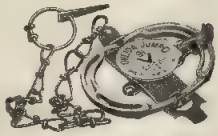
Made with especially compact construction; can be set in places where other styles can not be used

No. 0—Oneida Jump; for rat, gopher, weasel, etc.; spread of jaws 4 inches, weight per dozen, 5½ lbs Per Dozen, $3 18

No. 1—Oneida Jump, for muskrat, skunk, opossum, etc ; spread of jaws 4¾ inches; weight per dozen, 8 lbs Per Dozen, $3 66

No. 1½—Oneida Jump; for mink, skunk raccoon, muskrat, etc.; spread of jaws 5¼ inches; weight per dozen, 9½ lbs.
Per Dozen, $5 62
12 dozen in a case.

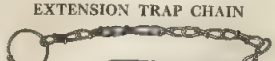
ONEIDA DOUBLE GRIP JUMP



Combines all advantages of the Double Grip Newhouse and Victor with a compactness and handiness that recommend it for the professional trapper. Because of its light weight, the trapper can carry a great many more of these Traps.

No. 91—Oneida Double Grip Jump, for mink, skunk, raccoon, muskrat, etc; spread of jaws 4¾ inches; weight per dozen, 8¼ lbs. . . . . .Per Dozen, $5 86
One dozen in a carton; 12 cartons in a case.

EXTENSION TRAP CHAIN



With a few of these chains the trapper can instantly double the length of the trap chains, so that a trapped animal may be drowned with certainty, or a drag given more play.

No.	1
Length of chain, inches	20
Gauge wire	12
Weight per dozen, lbs	2⅛
Per Dozen	$1 46

TRIUMPH TRAP PLACER

No. 1 Triumph Trap Placer; serviceable as a scoop, killer and placer; invaluable for water sets, a real necessity for land sets, length, 16 inches, weight each, 14 ounces . .
Per Dozen, $11 50

DEATH-KLUTCH GOPHER TRAPS

Strongly made of steel. Quick and easy to set Cannot be tripped or plugged by loose dirt. When the animals nose touches the trigger the jaws close upon its body, making escape impossible. Length 11 inches

No. 1DK—Death-Klutch Gopher Traps. Weight per dozen, 3¼ pounds.
.....Per Dozen, $4 00
Three dozen in a carton

GOPHER TRAPS

Renken's Sure Catch

No gopher so large, none so small, that this trap will not catch and hold

No. R4—Heavy steel wire spring; cold-rolled steel frame, black japanned finish; steel wire trigger; length 9 inches, width 2⅞ inches, height over all 4½ inches; weight per dozen, 12 pounds .....Per Dozen, $12.00

O. K.

O. K.—Steel wire spring, coppered steel jaw, the trigger and other metal parts are galvanized steel red stained boxwood, length 8¾ inches, width 4 inches, height 3 inches, weight per dozen, 8 lbs. .. .. Per Dozen, $3 80

NEWHOUSE

Newhouse Gopher—Wrought steel, with chain, 3-inch ring, length, 6 inches, weight per dozen 2¾ lbs. Per Dozen, $3 66
One dozen in a carton

MOLE TRAPS

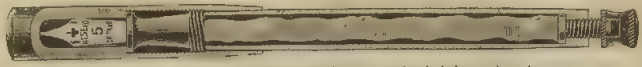
No. 16—Reddick ⅜x⅜-in. wrought steel frame, tinned; prong plate, 2¼x4 inches, with six 5-inch prongs heavy coil spring, japanned; height 24 inches; extends above ground, when set, 17 inches; weight per dozen, 33 lbs. Per Dozen, $19 20
One dozen in crate.

THE FAMOUS "RESEVO" PEN

AUTOMATIC SELF-FILLING SAFETY, NON-LEAKABLE, AN IDEAL GIFT. THE SELF-FILLING PEN WITH THE LARGEST INK CAPACITY.

Made and guaranteed by one of the largest and oldest established manufacturers of fountain pens in America. Hundreds of thousands of these pens have given unequaled service to satisfied users for over 18 years.

ILLUSTRATIONS ACTUAL SIZE



Cut showing sac empty after being twisted by turning lead [illegible] through.

No. J8977 With No. 2 pen and nickel cap, each. $3.30
No. J8978 With No. 3 pen and gold filled clip, each 4.70
No. J8979 With No. 4 pen and gold filled clip, each. 5.34
No. J8980 With No. 5 pen and gold filled clip, each $6.70
No. J8981 With No. 6 pen and gold filled clip, each. 8.00
No. J8982 With No. 7 pen and gold filled clip each . 9.34

1/10 14K Gold Filled—Plain Band and Clip

No. J8983 With No. 2 pen, each $4.70
No. J8984 With No. 3 pen, each. 6.00
No. J8985 With No. 4 pen, each . . . $6.70

1/10 14K Gold Filled—Chased Band and Clip

No. J8986 With No. 2 pen each $5.34
No. J8987 With No. 3 pen, each. 6.34
No. J8988 With No. 4 pen, each $7.34

Full Mounted 1/10 18K Gold Filled or Sterling Silver

No. J8989 No. 2 pen, gold filled mounting and clip, each $13.34
No. J8990 No. 2 pen, sterling silver mounting and clip, each. . . 13.34
No. J8991 No. 3 pen, gold filled mounting and clip, each $14.70
No. J8992 No. 3 pen, sterling silver mounting and clip, each 14.70

1 10 14K Gold Filled—Band and Clip

No. J8993 With No. 2 pen, each $4.70
No. J8994 With No. 3 pen, each 6.00
No. J8995 With No. 4 pen, each. $6.70

No. J8996 With No. 2 pen, each. $3.30
No. J8997 With No. 3 pen, each 4.70
No. J8998 With No. 4 pen, each. $5.34
No. J8999 With No. 5 pen, each. 6.70

1/10 18K Gold Filled—Chased Mounting

No. J9000 With No. 2 pen, each $13.34
No. J9001 With No. 3 pen, each . 14.70
No. J9002 With No. 4 pen each . $16.00

1/10 18K Gold Filled or Sterling Silver—Full Mounted

No. J9003 With No. 2 pen, gold filled, each . . $13.34
No. J9004 With No. 2 pen, sterling silver, each . . 13.34
No. J9005 With No. 3 pen, gold filled, each $14.70
No. J9006 With No. 3 pen, sterling silver, each 14.70

1/10 18K Gold Filled—Filigree Holder and Cap with Clip

No. J9007 With No. 2 pen, each $11.00
No. J9008 With No. 3 pen, each. 12.00
No. J9009 With No. 4 pen, each $13.34

The Chicago Safety Lever Self Filling Fountain Pens

The Highest Grade Pens Made, Containing the Merits of All, but the Faults of None. Filled by Raising the Small Lever in Barrel. Cannot Leak. Simple in Construction, Distinctive in Appearance.

THE LAST WORD IN FOUNTAIN PENS

FULLY GUARANTEED. PRICE OF FOUNTAIN PENS, EACH, COMPLETE WITH CLIP AS ILLUSTRATED AND QUOTED

No. J9010 No. 2—14k solid gold pens, black chased holder, nickel clip, each. $2.50
No. J9011 No. 3—14k solid gold pens, black chased holder, nickel clip, each 3.50

No. J9012 No. 4—14k solid gold pen, black chased holder, nickel clip, each $4.00
No. J9013 No. 5—14k solid gold pen, black chased holder, nickel clip, each. 5.00
No. J9014 No. 6—14k solid gold pen, black chased holder, nickel clip, each. 6.00

No. J9015 No. 2—14k solid gold pen, black chased holder, gold-filled lever, clip and band, each. $3.50
No. J9016 No. 3—14k solid gold pen, black chased holder, gold-filled lever, clip and band, each. 4.50

No. J9017 No. 2—14k solid gold pen, black chased holder, gold-filled lever, clip and wide band, each $4.00
No. J9018 No. 3—14k solid gold pen, black chased holder, gold-filled lever, clip and wide band, each 5.00

Short Holders for Ladies

No. J9019 No. 2—14k solid gold pen, black chased holder, nickel clip, each. $2.50
No. J9020 No. 3—14k solid gold pen, black chased holder, nickel clip, each. 3.50

No. J9021 No. 2—14k solid gold pen, black chased holder, gold-filled lever, clip and band, each $3.50
No. J9022 No. 3—14k solid gold pen, black chased holder, gold-filled lever, clip and band, each. 4.50

Short Holders with Gold Filled Ring at End for Ladies' or Gentlemen's Use Can Be Attached to a Waldemar Chain and Worn in Top Vest Pocket

No. J9023 No. 2—14k solid gold pen, black chased holder, gold-filled lever, band and ring, each $3.50
No. J9024 No. 3—14k solid gold pen, black chased holder, gold filled lever, band and ring, each 4.50

No. J9025 No. 2 14k solid gold pen, full mounted holder, best rolled gold stock, engine turned, gold-filled lever and ring, each $14.00
No. J9026 No. 3 14k solid gold pen, full mounted holder, best rolled gold stock, engine turned, gold filled lever and ring, each 15.00

SPORTSMEN'S NECESSITIES

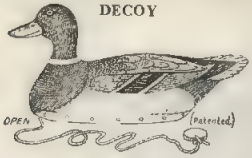
SUPERIOR WOOD DECOYS

Made true to life of "Featherwood" or Cedar. Heavily painted with lead paint and guaranteed not to crack or split. Eyes are as natural as can be made and set into head with long steel pins. Made with bottoms to conform to the water, so that once set, they will not turn over.

No. 205-6—Mallard . . . . Per Dozen, $18.70
No. 217-8—Blue Bill . . . . . Per Dozen, 18.70
No. 267-8—Blue Wing Teal Per Dozen, 18.70

One dozen in a crate, assorted one-third female and two-thirds male

REYNOLD'S FOLDING CANVAS DECOY



The entire decoy is made in five parts, a canvas body, colored true to life, wooden float and head block, one wire spring head support, one wire tail support.

The decoys float even if punctured by straw-shot, are portable, compact, light in weight and very attractive.

To open or fold the decoy, there is no adjustment, nothing necessary but the simple use of anchor cord in the regular manner. The decoy automatically expands by means of a spring when the anchor cord is unwound, such cord being wound around the device holds same in collapsed position.

Assorted, 6 males and 6 females to the dozen, with anchors and cords

No. 5—Automatic Folding, Mallard, male and female, complete with anchors and cords Per Doz. n. $18 00

One dozen assorted in a strong carrying box; Weight complete, 18 pounds

DECOY DUCK COLLAR

LEATHER

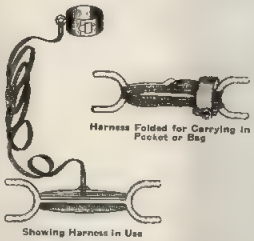
For use on live decoy ducks. Adjustable russet leather collar with ring, to which cord can be attached to prevent duck getting away

No. 2—Decoy Duck Collar . . . Per Dozen, $1 50

One dozen in a box.

LIVE DECOY DUCK HARNESS

METAL



Can Be Operated With One Hand

Collar will hold a live duck without injuring it allowing perfect freedom of movement and swimming. Easy to operate day or night, with or without gloves. Also splendid for wooden decoys. Collar is of highest grade phosphor bronze resilient and corrosion resisting; weight or anchor is of non-corrosive rabbit metal, be braided or fine line cord, with brass box swivel inserted as attached to center of anchor to give greatest possible drag for minimum weight and can be regulated to any length desired

No. 10 Live Decoy Duck Collar and Harness as illustrated Per Dozen, $8 00
No. 15—Metal Collar only Per Dozen 4 00

PATENT DECOY DUCK COLLAR

For Live Ducks

The most practical device for anchoring live decoys. Simplicity is its most essential feature, making it easy to attach or detach, even in very cold weather when fingers are numb. The rubber insulation protects the duck's neck from injury or chafing and the swivel obviates all tangling or snarling of lines.

Collars are constructed of highest grade brass spring wire impervious to water, and covered by rubber tubing.

The use of this patent collar enables one to yard-break his ducks. Simply attach collar to neck several days prior to using while ducks are at large in pens or yard, they unconsciously become accustomed to same. The collar and swivel in no way hampering their movements so when anchored as decoys, they are generally content

No. 5—Patent Decoy Duck Collar complete with swivel. . . . . Per Dozen, $4 00
In dozen lots. . . . . Per Dozen, 3 60

DUCK COLLAR SWIVEL SNAP

For Use With Leather Collar No. 2

No. 4 Nickel Plated Snap . Per Dozen, $1 50

One dozen in a box.

GOODYEAR RUBBER BOOTS

All Rubber Boots shown below are made by the Goodyear India Rubber Glove Manufacturing Company, and are the highest quality sold

KNEE BOOTS

No. 20—Knee Boots, heavy rubber, puncture-proof, net or web lined, F width . . . . . Per Pair, $8 00

Sizes 6, 7, 8, 9 and 10; not made in half sizes

HIP BOOTS

No. 30—Hip Boots, heavy rubber, puncture proof, net or web lined, F width Per Pair, $12 00

Sizes 6, 7, 8, 9, 10, and 11 not made in half sizes

STORE LADDERS

For Factory Shipment

Ladders are made of oak or pine, selected and kiln-dried. Steps are let into the sides and held by screws passing through the sides of Ladder; made perfectly rigid with steel braces. Ladder sides are 3½ inches wide and steps 4 inches wide on Ladders up to 14 feet; over 14 feet, sides are 4 inches wide and steps 5 inches wide; steps are 14 inches long between Ladder sides

Oak Ladders will be finished in dark golden oak, unless otherwise specified. Pine Ladders are filled and varnished. We can furnish any finish to match your woodwork, if you will submit sample.

RICHARD'S BALL-BEARING

Straight Ladders can be set close to shelving when not in use, as the upper fixture has a self-adjusting vertical slide, which also conforms to unevenness in floor. Straight Ladders furnished with ball-bearing rubber or fibre-tired wheels for bottom of Ladder. Bent Ladders have roller-bearing wheels running on half-round ledge track

Track is attached to the uprights of shelving, edge of shelves or to cornice. Brackets are not attached, so as to allow spacing according to location of uprights, etc.

Price List

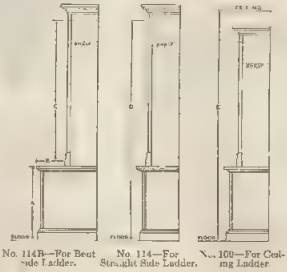
The following price list includes standard-length Ladders up to 14 feet, complete, with top and bottom fixtures. Track is not included.

	Rubber Tired
No. 114—Oak Straight Ladder (3½ pounds per foot) ....Each,	$20 00
No. 114 Hard Pine Straight Ladder (3 pounds per foot). "	18 00
No. 114—Top and Bottom Fixtures only (20 pounds) ...Per Set,	12 00
No. 114—Ladder Track, with regular brackets (¾ lbs.) Per Foot,	30
No. 114B—Oak Bent Ladder (3½ pounds per foot) .....Each,	22 00
No. 114B—Hard Pine Bent Ladder (3 pounds per foot). .Each,	20 00
No. 114B—Top and Bottom Fixtures only (20 pounds) Per Set,	12 00

Note.—Ledge Track for No. 114-B is included with price of Ladder complete.

On Bent Side Ladders state following: First, distance from floor to ledge (see A); second width of ledge (see B), third distance from ledge to point where track will be attached (see C); this dimension should be taken to bottom of track, fourth, if oak or pine Ladder (unless specified, oak Ladder will be sent); fifth, finish desired (unless specified, regular golden oak will be sent).

On Straight Side Ladders, state following: First, distance from floor to point where track will be attached (see D): this dimension should be taken to bottom of track; second, if oak or pine Ladder (unless specified, oak Ladder will be sent); third, finish desired (unless specified, regular golden oak will be sent).



No. 114B—For Bent Side Ladder. No. 114—For Straight Side Ladder. No. 109—For Ceiling Ladder

R-W ROLLER-BEARING CEILING

Bottom fixtures furnished with roller-bearing rubber-tired wheels.

Track is attached with brackets to ceiling; these brackets should be spaced not to exceed 36 inches. Unless otherwise specified, parallel ear brackets, as shown in cut, will be furnished.

Price List

The following price list includes standard length Ladders up to 14 feet, complete, with top and bottom fixtures. Track is not included.

	Rubber Tired
No. 109—Oak Ceiling Ladder (3½ pounds per foot), complete.....Each,	$22 00
No. 109—Hard Pine Ladder (3 pounds per foot), complete. "	20 00
No. 109—Top and Bottom Fixtures only (9½ pounds).. Per Set,	12.00
No. 109—Ladder Track, with brackets (2 pounds).. Per Foot,	30

On Ceiling Ladders, state following: First, distance from floor to ceiling (see E); second, if oak or pine Ladder (unless specified, oak Ladder will be sent); third, finish desired (unless specified, regular golden oak will be sent).

Ladder Track.—State following for Bent or Straight Side Ladders: First, entire length of each run of Track; second, number of uprights for each run; third, if uprights are straight-faced or turned spindle; fourth, give dimensions of same, also distance of uprights from center to center.

Note.—On Ceiling Ladders the entire length of each run of Track only is necessary.

WASHING MACHINES

UNIVERSAL ELECTRIC

Cabinet Type—Reversible Wringer

No. E-1930—Shipping wgt., crated, 325 lbs.....Each $150.00

No. E-1940—Same as No. E-1930, except has retinned copper tub .....Each 165.00

Orders should specify voltage and whether direct or alternating current. If alternating, state number of cycles.

Tub made of 20-gauge Armco galvanized iron; cylinder, 23-gauge, with 16-gauge ends. Capacity, 6 sheets. Detachable 20-foot cord, with rock-off connections. Floor space, 29½x23⅜ in. Height to top of tub, 36¼ in.

Cabinet handsomely enameled in white and gold. Removable top, all moving parts enclosed, all electric connections thoroughly insulated, mechanism and motor of ample capacity. Silent running cut gears, enclosed in oil, eliminating frequent oiling. Durable, sanitary, zinc cylinder, reversible type. Length, 13½ in. Diameter inside, 18 in. Weight, 19 lbs. Easily removed and cleaned. Size and construction of cylinder holes prevents possible injury to most delicate fabric. Action combines the advantages of both cylindrical and oscillating type washers. Cylinder automatically locks in position with opening at top when not operating, permitting the easy removal of washed clothes.

The cylinder revolves twice one way and then reverses, revolving twice in the opposite direction, making 18 complete revolutions per minute. There are five maple baffel strips on the inside of cylinder, which carry the clothes up until they fall back of their own weight into the hot suds. This action of hot suds surging through the clothes as they fall washes out all the dirt.

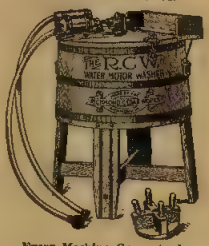
Self-draining galvanized tub. Settling zone in bottom of tub prevents sediment from being forced back into the clothes. Drain cock outside of cabinet 10⅝ in. from floor.

Sturdy, non-sagging, swinging wringer, reversible type. Equipped with simple safety release. Has four positions and will not operate except when locked in position. Wringer easily detached from washer. Vulcanized rubber rolls 12 in.; diameter, 1¾ in. Wringer has double drain board of ample size.

This Universal Washer is guaranteed for one year against defects of material and workmanship. It will give years of faithful service if used according to directions.

INSTRUCTIONS FOR LUBRICATION.—Grease transmission once in five years. Grease motor once each year. Oil wringer once each month.

R-C-W WATER MOTOR



Every Machine Guaranteed

R-C-W—Shipping weight, crated, 80 lbs. ..... Each $30.00

Virginia White Cedar Tubs—The best known wood for washing machine manufacture. Do not swell or sog, and are always ready for use.

Flat Steel Hoops—Extra heavy flat steel hoops, well riveted, with gold bronze finish.

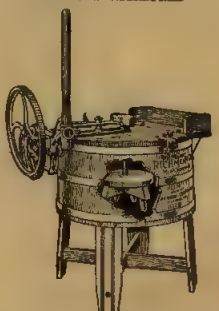
Extension Legs—Our extension stave legs are securely bolted to the machine, and well braced with hardwood sections, bolted through from side to side.

Patented Dolly—A patented hardwood dolly (X style) is a special feature in this washing machine.

The cedar tubs are finished in two coats of best agriculture filler and varnish, with gold trimmings.

Motive Power—The R-C-W is equipped with a powerful water motor "specially designed for economic use." Used on ordinary city pressure with the least amount of water.

RICHMOND HIGHSPEED



Heavy Flat Steel Hoops

Richmond Highspeed—Shipping weight, crated, 115 lbs. .....Each $25.00

Mechanism—The mechanical principle is positive in action, the segment lever drives directly the dolly pinion. All gears in accident proof covers, eliminating danger.

Construction—Cut tooth gears, heavy fly wheel, and a lever with ball and socket piston type head arrangement, traveling in machined raceway.

This machine is fitted with a well-balanced fly wheel, running on ten roller bearings.

The tub and dolly are like the R-C-W machine in material and construction.

RITTER-BURNS LUMBER COMPANY

HUNTINGTON, W. VA.

Manufacturers and Wholesalers of

Hardwood Mine Lumber and Timbers

Our Organization

Ritter-Burns Lumber Company, in addition to being manufacturers and wholesalers of hardwood lumber, and Yellow Pine, control the sales of other companies, located at convenient points to the mining districts of West Virginia, Virginia and Kentucky.

Inquiries

All inquiries should be addressed to the Ritter-Burns Lumber Company, Huntington, W. Va., where they will receive prompt and careful attention.

All contracts are made subject to the Inspection Rules and Sales Code of the Hardwood Manufacturers' Institute.

Materials Handled

Pit Posts—Hardwood
Mine Ties—Hardwood
Mine Rails—Hardwood
Car Material—Oak
Yellow Pine
Tipple Timbers—Hardwood
Breaker Timbers—Hardwood
Brattice Boards—Hemlock and Hardwood
Building Lumber

Our Facilities

Ritter-Burns Lumber Company controls the output of various lumber companies, all equipped for furnishing hardwood mine lumber and Yellow Pine. A brief description of three companies and their facilities for supplying the demands of the coal mining industry are given in the following paragraphs.

C. L. Ritter Lumber Company

This company operates a band mill and dry kilns at Whitewood, Virginia, the shipping point being Doran, Virginia, on the Norfolk & Western Railroad.

The plant is modern in every respect and the facilities for making prompt shipments are unexcelled.

Ritter Hardwood Lumber Company

The plant of this company is located at Sandy Huff, West Virginia, on the Norfolk & Western Railroad, and consists of a modern band mill.

Here all grades of hardwood lumber are manufactured for the mining industry and your requirements can be met with despatch.

Rockcastle Lumber Company

This company operates a double band mill at Seth, W. Va., on the C. & O. Railroad, where all grades of hardwood lumber are manufactured for the mining industry.

SERFAS LUMBER COMPANY

Drake Building
EASTON, PA.

Lumber Merchants

SERFAS SERVICE SATISFIES

Products

Mine Timbers;
Mine Props;
Mine Ties;
Railroad Ties;
Laggings;
Sprags;

Poles;
Dimension Oak;
Manufactured Lumber;
Cordwood;
Staves;
Bark.

Manufactured Lumber

Hemlock;
Hardwoods;
Spruce;
Yellow Pine;
White Pine;
Cypress.

Facilities

We operate saw mills, sprag mills, stave mills and control the output of a number of additional mills on contract.

Capacity

Our monthly capacity is about 50,000 mine and railroad ties; 200 carloads props; 6 to 8 carloads of sprags; 25 carloads of lagging; 100 carloads of cordwood, in addition to quantities of dimension oak and other manufactured lumber.

Prompt Shipments

Our facilities are exceptionally good for turning out material in large quantities and for handling orders promptly.

References

We will refer you to some of the biggest industrial concerns in the East as to our ability to give entire satisfaction.

CHILDREN'S VEHICLES

MOTOR WHEEL ROADSTERS

10-inch Wheels, Steel Tires, Ball Bearings

The Roadster Motor Wheel Ball Bearing Wagon is equipped with dust proof nickel plated hub caps. The body is painted yellow with red wheels trimmed in black. Diameter of wheels is 10 inches, with steel tires.

Nos.	503	504	505
Size, inches	14x32	16x36	18x40
Weight per crate, lbs	30	33	37
Each	$11.00	12.50	14 00

10-Inch Wheels, ¾-inch Rubber Tires DeLuxe Roller Bearings

Same as the 500 series, but equipped with ¾-inch rubber tires and DeLuxe roller bearings. The discs are securely riveted and have rolled-over rim.

Nos.	903	904	905
Size, Inches	14x32	16x36	18x40
Weight per crate, lbs.	30	33	37
Each	$12.50	14 00	16 00

Packed 1 in a crate.

Constructed for service and pleasure, with brake and removable box and ⅝-inch steel axle. Has extra steel fork brace to hold front gear rigid when heavy loads are drawn, also 3½-inch circular corrugated and grooved steel fifth wheel, not shown in illustration.

Equipped with 10-inch Auto Hub Wheel.

Nos.	303	304	305
Size, inches	14x32	16x36	18x40
Weight per crate, lbs.	30	35	40
Each	$9 30	11.00	12 50

Equipped with 10-inch Auto Roller Wheel.

Nos.	403	404	405
Size, inches	14x32	16x36	18x40
Weight per crate, lbs	33	38	43
Each	$10 50	12 00	13 50

Packed 2 in a crate

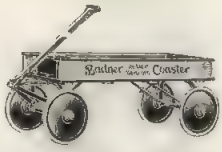
WOOD AXLE PARCEL WAGONS

A wagon especially adapted for small children. Solid wood wheels, 6 and 4 inches. Body painted green, striped and stenciled. Wheels red and decorated in golden yellow.

Nos.	280	281	282
Size, ins.	8½x16x2½	8½x20x2½	8½x24x2½
Wt. da., lbs	70	75	85
Per Doz.	$18 00	22 00	25 20

Packed 6 in a crate

BADGER COASTER



The Badger Roller Bearing Coaster Wagon. Heavy channel steel strongly braced. 10-inch double rim wheels painted red. Nickel plated hub caps, containing roller bearings. 16x36-inch natural finished body. Packed one in a carton.

No. 342 ⅞-inch rubber tires. Each, $10 50
No. 343 7-inch Balloon Tires. . Each, 12 00
Average shipping weight about 40 pounds

BADGER FARM WAGON

Bodies—Hardwood frame seat and dash boards. Handsomely painted in green and decorated in black and yellow, size 18x36 inches.

Gears—Heavy hardwood bolsters and reach, heavy steel braces. Axles made of ⅝-inch round steel, painted red with black striping.

Wheels—Extra heavy with malleable steel hubs, heavy welded tires and shaved spokes. Painted red with black striping, size 14 and 20 inches.

No. 354—Farm Wagon. . . . . Each, $17 50

PLAY CARTS

Hardwood construction throughout, body painted green, wheels and tongue red with white striping. Strong enough to carry an adult, but light enough for a baby to handle. Six-inch wheels.

Nos.	19	20	21	22	23
Sa. ins.	5x9	6x11	7x12	8x14	9x16
Per Dos.	$9 00	10 00	11 00	12 00	13.50

Packed 12 in a crate.

STEEL EXPRESS WAGON
B. M. & S. CO.'S "MOHAWK"

Has Bent Hardwood Tongue With Steel Hand Loop

Body—Made of heavy gauge steel, top edge reinforced with heavy steel wire. Bed substantially fastened to gear with steel bolts and nuts with washers under heads, to keep them from pulling through.

Wheels—Steel, enameled black, fitted with extra heavy spokes and wide tires; nickel-plated hub caps.

Gear—Extra heavy strap steel, enameled black; V-shaped braces, extra strong fifth wheel braces.

Tongue—Made of select, closely grained hardwood, fitted with steel hand-loop.

Finish—Enameled, varnished and decorated in three different color combinations—green and red, red and green, blue and black.

Packing—All "Mohawk" gears, wheels and tongues are packed in the Wagon beds.

Nos.	1	3
Size of body, inches	12x26	14x30
Wheels, inches	10	11
Weight per dozen, lbs.	190	240
Per Dozen, 2 in a carton	$57 20	72.00
Per Dozen, singly	61 20	76 00

One-sixth dozen in a dust-proof carton.

DIAMOND

Body—Made of steel, top edge reinforced with heavy steel wires, substantially fastened to gearing with eight steel bolts and nuts.

Gear—All steel, V-shaped braces. Extra heavy fifth wheel, with large circle, giving an equal bearing on rough surfaces and preventing strain on body; enameled black.

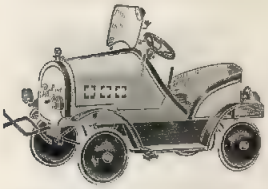
Wheels—Steel wheels, tinned, with pressed steel hubs.

Finish—Body enameled, varnished and striped, outside enameled crimson with gold stripes, inside painted green.

Nos.	05	04	02	1	3
Body, inches	6x12	8x18	10x22	12x26	14x30
Wheels, inches	5	6	8	10	11
Wagons in a carton	6	4	2	2	2
Per doz. lbs.	40	70	90	160	210
Per Dozen 2 in carton	$17.30	25 10	31 60	48 00	55.80
Per Dozen singly	21 30	29 10	35.60	50 00	59.80

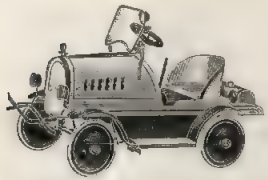
CHILDREN'S VEHICLES

TOY AUTOMOBILES



PACKARD, Body length over all 47 inches. Wheels 10 inches, double disc ball bearing with ⅝-inch rubber tires. Nickel plated hub caps Windshield with spot light. Tail light and fenders. Finished in bright colors, striped and decorated. Weight, 70 pounds

No. 110—Disc Automobile Each, $32 00

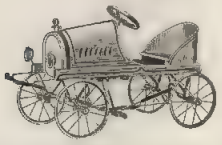


CADILLAC, Length of body 47-inches over all 10-inch double disc ball bearing wheels, nickel plated hub caps. and ⅝-inch rubber tires Windshield with spot light, tail lamp and fenders Weight, 62 pounds.

No. 108 Disc Automobile Each $27 00

PAIGE, Length of body 38-inches over all 10-inch rubber tired wheels. Wood steering wheel. Bumper, horn, gear shift, nickeled plated hub caps. Weight, 42 pounds

No. 105—Automobile . . . . . Each, $14 50



DODGE, Length of body 38 inches over all. Wheels 10x⅝-inch rubber tired. Wood steering wheel Bumper, self-starter button, metal lamps, finished in bright red or blue, striped and decorated. Weight, 37 pounds

No. 102—Automobile . . . . . Each, $11 00

BUDDY KAR

8-inch rubber tired disc wheels, 7½x15-inch seat, 11 inches high seat finished in bright red. Straight handle bar with jingle bell. For children 2 to 4 years of age

No. 447 Buddy Kar Each, $4 00

Two in a carton.

BUDDIE BIKE

Wire wheels painted red, with rubber tires Seat finished in bright red. Tinned handle bars with jingle bell. Pedals enameled red.

Nos.	439	441	441½
Wheels, inches	8	8	10
Tires, inches	⅜	½	½
Seat, inches	7½x15	7 ½x17½	7½x22
Height, inches	11	12	13
Each	$4 60	5 40	6 20

Two in a carton. Average weight, 19 pounds

Rubber tired wheels. Nickel plated handle bars with jingle bell, rubber grip and rubber pedals. Seat and wheels finished in bright red

Nos.	448	449	449½
Wheels, inches	6x8	6x8	8x10
Tires, inches	½	½	⅝
Seat, inches	7 ½x15	7½x17½	7½x22
Height, inches	11	11	15
Weight, pounds	19	20	22
Each	$5 90	6 50	7 50

Two in a carton

KIDDIE-KARS

Made of crowned hard maple, basswood and birch Wheels are finished in red, body of car natural, with orange tone, handsome varnish finish throughout.

Nos.	1	2	3	4	5
Hght., ins	7	8½	10	11½	12¾
Lgth., ins	16	17	18	20	22
Wheels, ins	4½	4½	5¼	6	7
Wt per doz., lbs	45	54	63	72	84
Per Doz	$25 00	33 30	41 70	46 30	50 50

No. 5 half dozen in crate, other numbers one dozen in crate

KIDDIE-KAR SPECIAL

Double disc steel wheels, electrically welded. Easy running roller bearings lubricated and sealed at factory. All wood work filled, enameled and finished with spar varnish. Seat and wheels finished in brilliant red, the other parts in rich yellow. Rubber tires.

Nos.	101	102	103	104
Height, inches	7	8½	10	11½
Length, inches	16	17	18	20
Wheels, inches	3½	4½	5¼	6
Tires, inches	½	½	⅝	⅝
Wt. per doz., lbs	42	51	63	78
Per Dozen	$37 20	49 50	62 00	74 50

KIDDIE KART SPECIAL

All wood parts are selected kiln dried Vermont hardwood finished in baked enamel and spar varnished, scarlet finish Double disc steel wheels, electrically welded and enameled a rich red. Self-contained roller bearings, lubricated and sealed at the factory

Nos.	301	302	303	304
Lgth of box, ins	20	24	30	30
Width of box, ins	9½	10½	12	12
Depth of box, ins	2⅜	2⅞	2⅞	2⅞
Size of wheels, ins.	4½	5½	6	7
Rubber tires, ins.	⅝	⅝	⅝	⅝
Wt. per doz., lbs.	69	87	126	138
Per Dozen	$57 90	71 70	91 40	108 20

CHILDREN'S VEHICLES

MOTOR WHEEL ROADSTERS

10-inch Wheels, Steel Tires, Ball Bearings

The Roadster Motor Wheel Ball Bearing Wagon is equipped with dust proof nickel plated hub caps. The body is painted yellow with red wheels trimmed in black. Diameter of wheels is 10 inches, with steel tires.

Nos.	503	504	505
Size, inches	14x32	16x36	18x40
Weight per crate, lbs	30	33	37
Each	$11.00	12.50	14 00

10-Inch Wheels, ¾-inch Rubber Tires DeLuxe Roller Bearings

Same as the 500 series, but equipped with ¾-inch rubber tires and DeLuxe roller bearings. The discs are securely riveted and have rolled-over rim.

Nos.	903	904	905
Size, Inches	14x32	16x36	18x40
Weight per crate, lbs.	30	33	37
Each	$12.50	14 00	16 00

Packed 1 in a crate.

Constructed for service and pleasure, with brake and removable box and ⅝-inch steel axle. Has extra steel fork brace to hold front gear rigid when heavy loads are drawn, also 3½-inch circular corrugated and grooved steel fifth wheel, not shown in illustration.

Equipped with 10-inch Auto Hub Wheel.

Nos.	303	304	305
Size, inches	14x32	16x36	18x40
Weight per crate, lbs.	30	35	40
Each	$9 30	11.00	12 50

Equipped with 10-inch Auto Roller Wheel.

Nos.	403	404	405
Size, inches	14x32	16x36	18x40
Weight per crate, lbs	33	38	43
Each	$10 50	12 00	13 50

Packed 2 in a crate

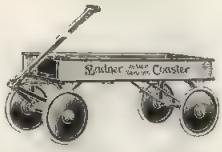
WOOD AXLE PARCEL WAGONS

A wagon especially adapted for small children. Solid wood wheels, 6 and 4 inches. Body painted green, striped and stenciled. Wheels red and decorated in golden yellow.

Nos.	280	281	282
Size, ins.	8½x16x2½	8½x20x2½	8½x24x2½
Wt. da., lbs	70	75	85
Per Doz.	$18 00	22 00	25 20

Packed 6 in a crate

BADGER COASTER



The Badger Roller Bearing Coaster Wagon. Heavy channel steel strongly braced. 10-inch double rim wheels painted red. Nickel plated hub caps, containing roller bearings. 16x36-inch natural finished body. Packed one in a carton.

No. 342 ⅞-inch rubber tires. Each, $10 50
No. 343 7-inch Balloon Tires. . Each, 12 00
Average shipping weight about 40 pounds

BADGER FARM WAGON

Bodies—Hardwood frame seat and dash boards. Handsomely painted in green and decorated in black and yellow, size 18x36 inches.

Gears—Heavy hardwood bolsters and reach, heavy steel braces. Axles made of ⅝-inch round steel, painted red with black striping.

Wheels—Extra heavy with malleable steel hubs, heavy welded tires and shaved spokes. Painted red with black striping, size 14 and 20 inches.

No. 354—Farm Wagon. . . . . Each, $17 50

PLAY CARTS

Hardwood construction throughout, body painted green, wheels and tongue red with white striping. Strong enough to carry an adult, but light enough for a baby to handle. Six-inch wheels.

Nos.	19	20	21	22	23
Sa. ins.	5x9	6x11	7x12	8x14	9x16
Per Dos.	$9 00	10 00	11 00	12 00	13.50

Packed 12 in a crate.

STEEL EXPRESS WAGON
B. M. & S. CO.'S "MOHAWK"

Has Bent Hardwood Tongue With Steel Hand Loop

Body—Made of heavy gauge steel, top edge reinforced with heavy steel wire. Bed substantially fastened to gear with steel bolts and nuts with washers under heads, to keep them from pulling through.

Wheels—Steel, enameled black, fitted with extra heavy spokes and wide tires; nickel-plated hub caps.

Gear—Extra heavy strap steel, enameled black; V-shaped braces, extra strong fifth wheel braces.

Tongue—Made of select, closely grained hardwood, fitted with steel hand-loop.

Finish—Enameled, varnished and decorated in three different color combinations—green and red, red and green, blue and black.

Packing—All "Mohawk" gears, wheels and tongues are packed in the Wagon beds.

Nos.	1	3
Size of body, inches	12x26	14x30
Wheels, inches	10	11
Weight per dozen, lbs.	190	240
Per Dozen, 2 in a carton	$57 20	72.00
Per Dozen, singly	61 20	76 00

One-sixth dozen in a dust-proof carton.

DIAMOND

Body—Made of steel, top edge reinforced with heavy steel wires, substantially fastened to gearing with eight steel bolts and nuts.

Gear—All steel, V-shaped braces. Extra heavy fifth wheel, with large circle, giving an equal bearing on rough surfaces and preventing strain on body; enameled black.

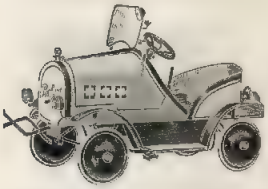
Wheels—Steel wheels, tinned, with pressed steel hubs.

Finish—Body enameled, varnished and striped, outside enameled crimson with gold stripes, inside painted green.

Nos.	05	04	02	1	3
Body, inches	6x12	8x18	10x22	12x26	14x30
Wheels, inches	5	6	8	10	11
Wagons in a carton	6	4	2	2	2
Per doz. lbs.	40	70	90	160	210
Per Dozen 2 in carton	$17.30	25 10	31 60	48 00	55.80
Per Dozen singly	21 30	29 10	35.60	50 00	59.80

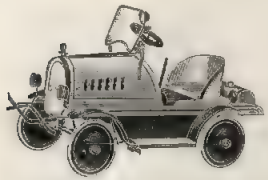
CHILDREN'S VEHICLES

TOY AUTOMOBILES



PACKARD, Body length over all 47 inches. Wheels 10 inches, double disc ball bearing with ⅝-inch rubber tires. Nickel plated hub caps Windshield with spot light. Tail light and fenders. Finished in bright colors, striped and decorated. Weight, 70 pounds

No. 110—Disc Automobile Each, $32 00

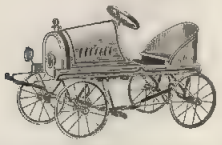


CADILLAC, Length of body 47-inches over all 10-inch double disc ball bearing wheels, nickel plated hub caps. and ⅝-inch rubber tires Windshield with spot light, tail lamp and fenders Weight, 62 pounds.

No. 108 Disc Automobile Each $27 00

PAIGE, Length of body 38-inches over all 10-inch rubber tired wheels. Wood steering wheel. Bumper, horn, gear shift, nickeled plated hub caps. Weight, 42 pounds

No. 105—Automobile . . . . . Each, $14 50



DODGE, Length of body 38 inches over all. Wheels 10x⅝-inch rubber tired. Wood steering wheel Bumper, self-starter button, metal lamps, finished in bright red or blue, striped and decorated. Weight, 37 pounds

No. 102—Automobile . . . . . Each, $11 00

BUDDY KAR

8-inch rubber tired disc wheels, 7½x15-inch seat, 11 inches high seat finished in bright red. Straight handle bar with jingle bell. For children 2 to 4 years of age

No. 447 Buddy Kar Each, $4 00

Two in a carton.

BUDDIE BIKE

Wire wheels painted red, with rubber tires Seat finished in bright red. Tinned handle bars with jingle bell. Pedals enameled red.

Nos.	439	441	441½
Wheels, inches	8	8	10
Tires, inches	⅜	½	½
Seat, inches	7½x15	7 ½x17½	7½x22
Height, inches	11	12	13
Each	$4 60	5 40	6 20

Two in a carton. Average weight, 19 pounds

Rubber tired wheels. Nickel plated handle bars with jingle bell, rubber grip and rubber pedals. Seat and wheels finished in bright red

Nos.	448	449	449½
Wheels, inches	6x8	6x8	8x10
Tires, inches	½	½	⅝
Seat, inches	7 ½x15	7½x17½	7½x22
Height, inches	11	11	15
Weight, pounds	19	20	22
Each	$5 90	6 50	7 50

Two in a carton

KIDDIE-KARS

Made of crowned hard maple, basswood and birch Wheels are finished in red, body of car natural, with orange tone, handsome varnish finish throughout.

Nos.	1	2	3	4	5
Hght., ins	7	8½	10	11½	12¾
Lgth., ins	16	17	18	20	22
Wheels, ins	4½	4½	5¼	6	7
Wt per doz., lbs	45	54	63	72	84
Per Doz	$25 00	33 30	41 70	46 30	50 50

No. 5 half dozen in crate, other numbers one dozen in crate

KIDDIE-KAR SPECIAL

Double disc steel wheels, electrically welded. Easy running roller bearings lubricated and sealed at factory. All wood work filled, enameled and finished with spar varnish. Seat and wheels finished in brilliant red, the other parts in rich yellow. Rubber tires.

Nos.	101	102	103	104
Height, inches	7	8½	10	11½
Length, inches	16	17	18	20
Wheels, inches	3½	4½	5¼	6
Tires, inches	½	½	⅝	⅝
Wt. per doz., lbs	42	51	63	78
Per Dozen	$37 20	49 50	62 00	74 50

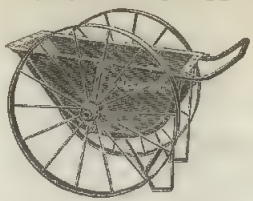
KIDDIE KART SPECIAL

All wood parts are selected kiln dried Vermont hardwood finished in baked enamel and spar varnished, scarlet finish Double disc steel wheels, electrically welded and enameled a rich red. Self-contained roller bearings, lubricated and sealed at the factory

Nos.	301	302	303	304
Lgth of box, ins	20	24	30	30
Width of box, ins	9½	10½	12	12
Depth of box, ins	2⅜	2⅞	2⅞	2⅞
Size of wheels, ins.	4½	5½	6	7
Rubber tires, ins.	⅝	⅝	⅝	⅝
Wt. per doz., lbs.	69	87	126	138
Per Dozen	$57 90	71 70	91 40	108 20

CONCRETE CARTS

The Strongest Concrete Cart on the market. Length over all, 53 inches; width, 36½ inches. Wheels: 36 inches in diameter; tire ⅜x2-inch; 14—½-inch round spokes, cast iron hubs, 1¾-in axle



No 1.

Tray: 14-gauge, reinforced with angle iron entirely around the bottom and top edge. Length, 36¼ inches, width, 21½ inches; depth, 16 inches inside.

Capacity—5 Cubic Feet of Wet Concrete or 6 Cubic Feet of Dry Material.

No. 1—Concrete Carts, Weight 200 pounds.... ....Each, $54.00

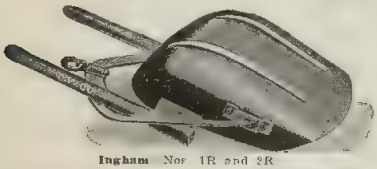
DITCHING SCRAPERS

Doan

Especially adapted for clearing out and filling ditches, leveling roads, barnyards and uneven places. Made of Seasoned Hardwood with a Special Steel Blade 48 inches long, 7 inches wide and 5/16 inch thick. The Scrapers are well ironed and bolted, and the hounds are of 1⅜x⅝ inch Steel with ⅝ inch Cable Chain

Doan Ditching Scrapers.....Each, $15.50

ROAD SCRAPERS



Ingham Nos. 1R and 2R

King—Nos. 1KR to 3KR

Ingham Scrapers are pressed from a heavy plate of Hardened Steel of the toughest quality, shaped throughout on scientific principles which utilize the great strength of the steel to the best advantage, making these scrapers most efficient for the hard work for which they are built. They fill, draw and dump easily. **No. 1R** is adapted for heavy grading and long hauls. **No. 2R** is recommended for all railroad, township and farm work and is also used on vessels for righting up cargoes of ore. **Nos. 1R and 2R** are fitted with ½x1½ inch Steel Runners, which fit closely to the bottom and are fastened with countersunk rivets.

Nos.	Size, inches	Capacity Cubic Feet	Weight, Pounds	Each
Ingham 1R	33½x32x11½	7	110	$17.00
Ingham 2R	31½x29x11½	5	102	16.00

King Scrapers fill the demand for a scraper that will do all regular light work and still cost less than others. They are the same shape as the Ingham shown above but are not as reliable. The flange around the top made by turning back the edge of the bowl reinforces and stiffens the bowl as well as adding much to the strength and capacity of the scraper. **Nos. 1KR to 3KR** are fitted with Steel Runners fastened with countersunk rivets.

Nos.	Size, inches	Capacity, Cubic Feet	Weight, Pounds	Each
King 1KR	33½x32x10	7	82	$12.00
King 2KR	32 x28x10	5	75	11.50
King 3KR	32 x25x10	3	65	11.00

Moe's Line of Poultry Supplies

Mash Hopper

Oat Sprouter

A standard, complete line, so you can supply every need of the poultry raiser. Fountains, feeders, hoppers, incubators, brooders, etc.

A fine line for you to handle. New catalog now ready.

HOEFT & COMPANY, Inc.

408 N. Ashland Ave., Chicago, Ill.

214 N. Alameda St., Los Angeles, Cal.

ROBERTSON

Horseshoe

MAGNET HAMMERS

THE HAMMER HOLDS THE TACK

The Original Horseshoe Magnet Hammers. Tacks or small nails are held by the magnet end of hammer, ready for driving anywhere within reach.

The Best Magnet Hammer on the Market

ORDER FROM JOBBER

Silver Medal Panama-Pacific Exposition

ARTHUR R. ROBERTSON

Sole Mfr.

Boston, Mass.

Trade marks registered U. S. Pat. Office

Fast Sellers when displayed

Moore Push-Pins

Glass Heads—Steel Points

Moore Push-less Hangers

Fine Tool Tempered Steel Points

The Hanger with the Twist

-1925-

25th Anniversary

Let us tell you about the Gulliver Method of displaying small wares

MOORE PUSH-PIN CO.

(Wayne Junction)

Philadelphia, Pa.

CROQUET SETS

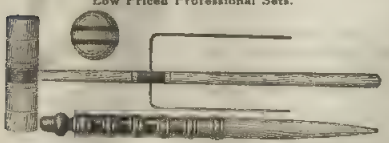
While we do not recommend unvarnished croquet sets we list the following numbers in the oiled finish. Each set is packed in a flat, lock cornered box with hinges and mitred handles. Mallets are 5-inch beaded and striped with turned and oiled handles. Rock maple balls with single color bands, varnished. Two stakes, one with full set of color bands, and one with red top. Ten galvanized formed wire arches.

No. 04—Four-ball set. Wt., set, 14 lbs. Per set..$2.80
No. 06—Six-ball set. Wt., set, 16 lbs. Per set.. 3.50
No. 08—Eight-ball set. Wt., set, 20 lbs. Per set.. 4.00

Manufactured from rock maple. Good varnish is used on these sets and they will not become powder marked in handling or in use. Each set contains rules for playing the game. Mallets are 5-inch beaded and striped with turned and varnished handles. Rock maple balls with single color bands. Two stakes, one with full set of color bands, and one with red top. Ten galvanized formed wire arches. Lock cornered flat top box with hinged cover and mitred handles

No. 16—Four-ball set. Wt , set, 16 lbs. Per set..$3.70
No. 18—Eight-ball set. Wt., set, 20 lbs. Per set.. 4.90

Low Priced Professional Sets.

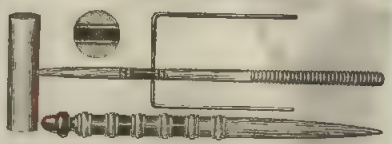


To take care of the demand for professional sets which can be sold at a low price, we list three numbers with the 8-inch professional mallet. They are finished with the same high grade varnish as the more expensive sets, and nothing but hard maple is used.

Mallets and handles are finished with broad color bands and ornamented with fine stripes. Maple balls with two color stripes, nicely varnished. Beaded stakes; generous size and nicely finished. Ten flat top galvanized wire wickets. Basswood box, lock cornered with hinged cover.

No. 34—Four-ball set. Wt., set, 17 lbs. Per set..$5.00
No. 36—Six-ball set. Wt., set, 21 lbs. Per set.. 6.00
No. 38—Eibht-ball set. Wt., set, 24 lbs. Per set.. 7.00

Professional Sets.

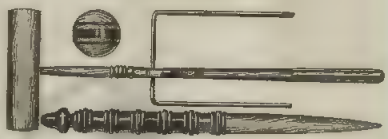


This style is manufactured with 8-inch mallets. It supplies the demand for customers who want a high-grade professional set but prefer an 8-inch mallet instead of longer and heavier mallets. The finish is of the best, and the set makes a very attractive display. Complete rule book included.

Mallets are 8-inch hand turned, finished with white shellac and polished, with 28-inch beaded handles, beautifully finished with bronze and black stripes in addition to the broad color band. Selected white maple balls, hand striped. Heavy beaded stakes with two color decorations on the beads in addition to the color bands. Ten flat top aluminum finished arches with sockets. Beautiful sycamore box, finished with partitions for the balls, and equipped with brass handles.

No. 76—Six-ball set. Wt., set, 21 lbs. Per set..$8.00

High Grade Professional Sets.



These supply the demand for exceptionally well finished sets at prices that make them active sellers. Repeat orders from customers who have stocked them have demonstrated this conclusively. The octagon handles furnish a firm, easy grip for the hand, and the mallets are perfectly balanced. The boxes are exceptionally well finished, making an attractive display. Complete illustrated book of rules included with each set.

Mallets are 9 inches, genuine shellac polished, with 28-inch octagon handles, striped in gold and black in addition to the broad colored bands in the center. Selected clear stock balls, hand striped. Heavy beaded stakes, beautifully decorated with sage green and gold on the beads in addition to the color bands. Heavy flat top arches, finished in aluminum, complete with large wooden sockets. Sycamore box, beautifully polished and equipped with brass handles and corners. Partitioned off in sections.

No. 86—Six-ball set. Wt., set, 27 lbs. Per set..$10.00

All above, one set in a box.

TRADE – R. C. CO. – MARK

SILVER PLATE ON NICKEL SILVER

ORLEANS

Gray Finish

Actual size

Spoons

Tea ..... per doz., $3.50
Dessert ..... " " 5.82
Table ..... " " 6.52

Solid Handle Knives
Medium, per doz., $7.40
Dessert, " 7.20
Packed one-half dozen in box

Butter Knife
Per doz $6.52
Packed 1 in liner box, per doz., $8.16

Flat Handle Forks
Medium, per doz., $6.52
Dessert " " 5.82

Orange Spoon
Packed 6 in lined box, per doz., $6.24

Butter Spreader
Packed 6 in lined box, per doz., $6.38

Sugar Shell
Per doz. .....
Packed 1 in lined box, per doz., $7.30

Oyster Fork
Per doz $5.84
Packed 6 in lined box, per doz., $6.40

Cold Meat Fork
Packed 1 in lined box, each $1.18

Individual Salad Fork
Per doz. $6.06
Packed 6 in lined box, per doz., $6.62

Ice Tea Spoon
Per doz. $5.25

Berry Spoon
Packed 1 in lined box
Each $1.56

Cream $1.08
Gravy 1.96
Soup, Medium 3.75

One third size

Soup Spoon
Packed 12 in lined box, per doz. $6.52
Packed 6 in lined box, " " 7.05

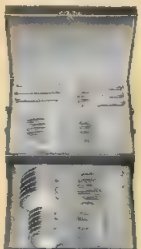
Coffee Spoon
Packed 6 in lined box, per doz., $3.54

No. 200 Set, $1.96
6 Solid Handle Medium Knives and 6 Flat Handle Medium Forks

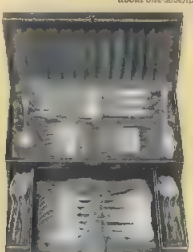
No. 223 Set, $1.30
Butter Knife and Sugar Shell
In linen box

No. 74 Child's Set, $1.36
Pattern No. 1 Knife and Spoon
In lined box
No. 21 Child's Set, Pearl Handle Knife, $3.20

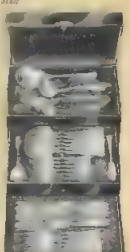
Illustrations of sets and chests, about one-seventh actual size



No. 235 Chest, 26 pieces ..$9.44
Lined throughout with velvet. Lower Compartment for Knives, Forks and Spoons. Top Tray for Teaspoons, Dessert Spoons, Medium Knives, Medium Forks, 1 Butter Knife, 1 Sugar Shell



No. 237 ... pieces ... $10.60
Blue ... Chest ... Lower Compartment ... Top Tray for Teaspoons, Dessert Spoons, Medium Knives, Medium Forks, 1 Butter Knife, 1 Sugar Shell



No. 239 Chest ... 53
... Lower Compartment ... Top Tray for ... Dessert Spoons, Medium Knives, Medium Forks, 1 Butter Knife, 1 Sugar Shell

No. 240 Case, 26 pieces ...$15.60
... Lower Compartment ... Top Tray for ... Dessert Spoons, Medium Knives, Medium Forks, 1 Butter Knife, 1 Sugar Shell

TRADE – R. C. CO. – MARK

SILVER PLATE ON NICKEL SILVER

CHATHAM

Bright or Gray Finish

Actual size

Spoons

Tea ..... per doz., $3 76
Dessert ..... " " 5 82
Table ..... " " 6 52

Solid Handle Knives
Medium, per doz., $7.40 Dessert, per doz., $7.20
Packed one half dozen in box

Butter Knife
Per doz $6.52
Packed ... in lined box, per doz $8.16

Flat Handle Forks
Medium ..... per doz., $6 52
Dessert ..... " 5.32

Orange Spoon
Packed 6 in lined box, per doz., $6 24

Butter Spreader
Packed 6 in lined box, per doz., $6.38

Sugar Shell
Per doz $5.32
Packed 1 ... lined box, per doz., $7.50

Oyster Fork
Per doz $5 84
Packed 6 in lined box, per doz $6.40

Cold Meat Fork
Packed 1 in lined box, each, $1.18

Baby Spoon
Packed 1 in lined box, per doz., $7.08

Individual Salad Fork
Per doz $8 05
Packed 6 in lined box, per doz., $8.62

Ice Tea Spoon
Per doz $5 28

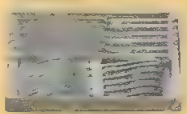
Ladles
Packed 1 ... lined box
Cream ..... each, $1 08
Gravy ..... " 1 36
Soup, Medium ..... " 3 76

One-third size

Berry Spoon
Packed 1 ... lined box
Each, $1.58

Soup Spoon
Packed 12 ... lined box, per doz., $6.52
Packed 6 in lined box, " " 7.08

Coffee Spoon
Packed 6 ... lined box
Per doz., $3.54



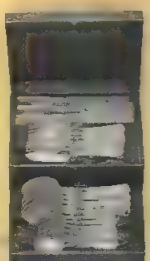
No. 200 Set, $6.96
6 Solid Handle Medium Knives and 6 Flat Handle Medium Forks

No. 223 Set, $1.30
Butter Knife and Sugar Shell
In lined box

Illustrations of sets and chests, about one-seventh actual size

No. 15 Child's Set, $1.36
Fancy Knife, Fork and Spoon
In lined box

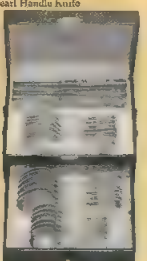
No. 21 Child's Set, $3 20
Pearl Handle knife



No. 233 Chest, 26 pieces $16.44
Polished Hardwood Chest with Drawer, Flat Inlaid White Lined ... Mahogany Finish. Blue Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, 6 Medium Knives, 1 Butter Knife, 1 Sugar Shell.

No. 234 Chest, 42 pieces $33 80
Mission Finish ... Drawers Blue Lined ... Contains 6 Tea Spoons, 6 Table Spoons, 6 Dessert Spoons, 6 Full Forks, 6 Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell, 1 Cream Ladle, 1 Gravy Spoon, 1 Ice Tea Spoon.

No. 240 Case, 26 pieces, $15.60
Blue Leatherette Case. Blue Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Forks, Hollow Handle, 1 Butter Knife, 1 Sugar Shell.



No. 250 Chest, 26 pieces, $14.78
Mission Oak Paper Covered Chest with Drawer. Blue Lined. Contains 6 Tea Spoons, 6 Table Spoons, 6 Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell.

ROGERS

HEAVY WEIGHT

GENERAL PUTNAM

Bright Finish

Actual size

Solid Handle Knives or Forks

Hollow Handle Knives or Forks

Tea Spoons, 6 in unlined box
Dessert Spoons, 6 " " " " "
Table Spoons, 6 " " " " "

Medium Knives or Forks, 6 in unlined box doz., $9 83
Dessert Knives, 6 in unlined box " 9 65

Medium Knives or Forks, 6 in lined box. doz., $24 76
No. 60 Medium, Stainless Steel Blade, 6 in lined box " 26 60
Dessert Knives or Forks, 6 in lined box " 24 14
No. 61 Dessert Knives, Stainless Steel Blade, 6 in lined box " 27 98

Coffee Spoon
Extra Plate, set of six, $1.24

Medium Forks, 6 in unlined box, doz., $13.2
Dessert " 6 " " " " 11 6

Butter Spreader
Extra Plate, set of six, $5.88

Packed 12 in unlined box per doz., $14.56
Packed 1 in blue lined gift case, per doz., $16.64
Extra Plate

Oyster Fork
Extra Plate, set of six, $4.38

Individual Salad Fork
Extra Plate, set of six, $6.56

Packed 12 in unlined box
Per doz., $
Packed 1 in blue lined gift case
Per doz. $13.56
Extra Plate

Soup Spoon

Packed 12 in unlined box
Per doz., $13.12

Ladles
Cream, Extra Plate, each, $1 56
Gravy, " " " 2.08
Oyster, " " " 4.50
Medium, " " " 5.96

All Fancy Pieces In Blue Lined Gift Boxes

Extra Plate, each $3 78

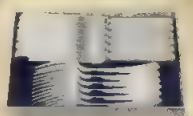
Cold Meat Fork
Extra Plate each $1 74

Smaller sized

Ice Tea Spoon
Packed 12 in unlined box per doz., $9.06

No. 10 Chest, 26 pieces, lined
Satin, $9.96
Hollow Handle Child's Knife, Fla
Fork and Spoon

No. 806 Baby Set, lined
Flat Baby Spoon and
Fork



No. 806, Set in blue lined gift case, $11 56
6 Solid Handle
6 Flat Forks
No. 802 Set, in blue lined gift case, $18.94
6 Hollow Handle Med. Knives and 6 Flat Forks

Illustrations of sets and chests, about one-seventh actual size

No. 835 Chest, 25 pieces $27 04
Polished Hardwood with Hand
White Lined Maker Finish Silver Lined
Tea Spns., 6 Table Spns., Med. Fks. 6 H
Med. Knives Butter Kn., 6 Sugar Shell.

No. 8
Polished
Silver
Tea Spns.
Butter Kn.

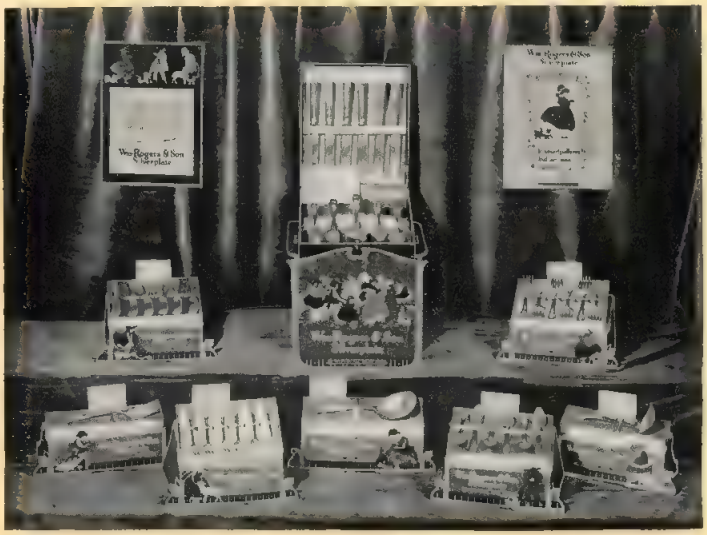
No.
Lined
6 Table
6 Flat Forks, 6 H
Butter Knife, Sugar Shell

No.
Lined
Brass Vel
6 Table
6 Med. Fks. 6 H Med. Knives,
Butter Knife, Sugar Shell

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

"THE BEST AT THE PRICE"



Free Window Display Material in Colors

Strikingly effective with the attention getting figures featured in all our national advertising color pages. This material will be sent free of charge with order for the necessary fancy pieces as follows:

No. 53—53-Piece Display Assortment

	Retail Price		Retail Price		Retail Price	
1 Berry Spoon	$2.00	6 Butter Spreaders	$4.25	1 Cold Meat Fork	$1.25	Total cost of 53-piece assortment displayed on stand $35.25 (retail)
6 Orange Spoons	3.00	1 Gravy Ladle	1.50	1 26 Piece Set with Chest No. 740	15.25	Total cost to dealer 40.38 (list)
6 Individual Salad Forks	4.75	6 Oyster Forks	3.25			

Wm. Rogers & Son Silverplate

Carries a stronger guarantee of quality than any other line in or near its price range

It is the *popular priced* companion line of 1847 Rogers Bros. Our national advertising goes into some 5,000,000 homes in 1923

TWO MORE SPECIAL OFFERS

Child's Sets on Attractive Gift Cards In Colors

In any Wm. Rogers & Son pattern

No. 1C	Flat Handle Knife, Fork and Spoon	$2.20
*No. 2C	Solid Handle Knife, Flat Fork and Spoon	2.20
No. 10C	Hollow Handle Knife, Flat Fork and Spoon	3.40

*Fancy Solid Handle Knife to match Mayfair, La France and Lancaster Plain with other patterns

Six Assorted Baby Spoons on Easel Display Card in Colors

No. 31 $4.13

Subjects: Peter Rabbit, Bo-Peep, Little Miss Muffet, Bobby, Shed

INTERNATIONAL SILVER CO.

Wm. Rogers & Son

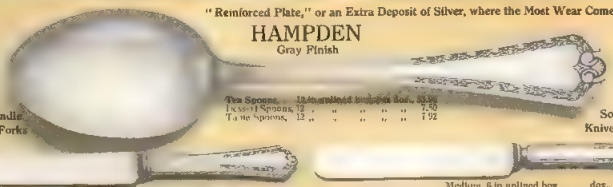
"THE BEST AT THE PRICE"

"Reinforced Plate," or an Extra Deposit of Silver, where the Most Wear Comes

HAMPDEN

Gray Finish

Actual size



Tea Spoons, 12 in unlined box, doz., $3.60
Dessert Spoons, 12 " " " " " 5.50
Table Spoons, 12 " " " " " 7.92

Hollow Handle Knives or Forks

Medium, 6 in lined box ..... doz., $8.40
No. 50 Medium, Stainless Blade " 27.26
Dessert, 6 in lined box " 23.85
No. 51 Dessert, Stainless Blade " 26.64

Solid Handle Knives or Forks

Medium, 6 in unlined box ..... doz., $9.56
No. 74 Medium, Stainless Blade " 18.64
Dessert, 6 in unlined box " 9.36

Medium Forks, 12 in lined box, doz., $7.92
Dessert, doz., $5.50

Oyster Fork
Extra Plate, set of six, $3.44

Butter Knife
Packed 12 in unlined box, per doz., $7.92
Packed 1 in lined box " " " 9.58

Coffee Spoon
Extra Plate, set of six, $2.14
Packed 12 in unlined box, per doz., $1.96

Individual Salad Fork
Extra Plate, set of six, $5.20

Soup Spoon
Packed 6 in unlined box, doz., $7.92
Packed 6 in lined box " " 8.64

Sugar Shell
Packed 12 in unlined box, per doz., $7.58
Packed 1 in lined box " " 9.16

Orange Spoon
Extra Plate, set of six, $3.34

Ladles
Cream, Extra Plate, each, $1.24
Gravy, " " " .65
Oyster, " " " 2.58
Medium, " " " 4.40

Berry Spoon
Extra Plate, each, $2.20

One third size

Baby Spoon
Extra Plate
each, 50 cts

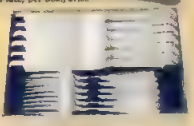
Ice Tea Spoon
Packed 12 in unlined box
Extra Plate, each, $1.26

Pickle Fork, Long
Extra Plate, each, $1.66

All Fancy Pieces in Blue Lined Gift Boxes

No. 500 Set, in blue lined gift box, $8.71
6 Small Size Medium Knives and

No. 1 Children's Set, in blue lined gift box, $2.20
Child's Flat Handle Knife, Fork and Spoon



No. 702 Set, in blue lined gift box, $15.92
6 Hollow Handle Medium Knives and 6 Flat Forks

Illustrations of chests are reduced one-seventh actual size

No. 750 Chest, 26 pieces $7.68
Mahogany finished wood chest with Brass Hinges and Lock, containing 6 Tea Spoons, 6 Dessert Spoons, 6 Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell, 1 Gravy Ladle, 1 Cream Ladle, 1 Pair Pickle Servers.

No. 778 Chest, 35 pieces $23.52
Mahogany finished wood chest with Brass Hinges and Lock, containing 6 Tea Spoons, 6 Dessert Spoons, 6 Soup Spoons, 6 Solid Handle Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell, 1 Gravy Ladle, 1 Cream Ladle, 1 Pair Pickle Servers, 1 Pair Cold Meat Forks.

No. 761 Chest, 37 pieces $18.82
Mahogany finished wood chest with Brass Hinges and Lock, containing 6 Tea Spoons, 6 Dessert Spoons, 6 Soup Spoons, 6 Solid Handle Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell, 1 Gravy Ladle, 1 Cream Ladle, 1 Pair Pickle Servers, 1 Pair Cold Meat Forks.

No. 710 Case, 45 pieces $18.39
Red Velvet Lined Case, containing 6 Tea Spoons, 6 Dessert Spoons, 6 Soup Spoons, 6 Solid Handle Medium Knives, 6 Medium Forks, 1 Butter Knife, 1 Sugar Shell, 6 Individual Salad Forks, 6 Orange Spoons, 1 Pair Pickle Servers.

INTERNATIONAL SILVER CO.

A Special that sells other Rome Utensils

ROME

"COPPER KING"

SOLID COPPER (NICKEL PLATED)

No. 8 Tea Kettle which can be sold to the consumer for $1.49

On and east of the Mississippi River

$1.59 west of the Mississippi River.

The "Copper King" Kettle is not merely a very fine utensil at a very attractive price. It is more than a *leader* that sells itself quickly. It is a utensil that sells many other Rome Utensils.

Its low price means quick turnover. The interest in copper which it arouses sells other Rome Copper Tea Kettles, Coffee Pots, Percolators, Tea Pots, Inset Pails, Dippers and Wash Boilers.

In doing this the "Copper King" accomplishes its purpose—bigger sales all the way around in Rome Copper Utensils. Get in touch with your jobber or write us.

Fill in and mail today!

Advertising Department Rome Manufacturing Co., Rome, N. Y.

Send us further information and imprint, without cost, name and address given below, on "Copper King" consumer folders.

NAME: . . .

ADDRESS: . . . .

CITY AND STATE: . . . . . .

Say you saw it in GOOD HARDWARE

"I now make up my cash 4 to 6 times quicker"

Enterprising St. Louis retailer praises the wonderful

Sundstrand

Adds **Combination** Multiplies

Cash Register

Forced Indication — Automatic Control

In the letter reproduced at the right, one of America's representative retailers tells of the time-saving, money-making service rendered by his Sundstrand Combination Cash Register.

This wonderful machine stops guesswork and increases profits, because—

1—It gives complete cash register protection plus adding machine convenience, in *one* machine, at *one* low cost

2—Shows how many customers and classifies sales by departments and clerks

3—Makes a non erasable record at time of transaction.

4—Indicates and records cash, credit paid out, received on account

5—Automatically excludes from cash total—money paid out, charge items, etc.

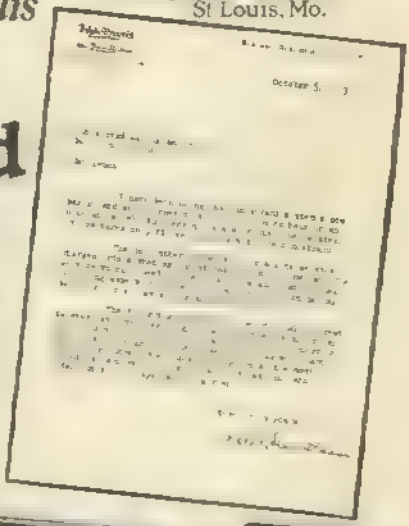
6—Cash total can be read at any time

7—Records additions and multiplications on right-hand tape.

8—Records cash register transactions on left hand tape

9—Cash register tape records in machine and is held under lock and key

Theo. R. Schwerdtmann, St Louis, Mo.



10—Speeds records sales from 4 to 6 times

11—Complete credit check for handling credit accounts, old style sales slips

What Sundstrand is doing for Schwerdtmann of St Louis it is doing for thousands of keen retailers all over the country. A demonstration will be a revelation to you. Address Dept. H

SUNDSTRAND ADDING MACHINE COMPANY, ROCKFORD, ILL.

Sales and Service Stations throughout the United States and Canada

Write—right now!

Round Oak Oil Ranges – strong and durable, yet attractively priced—are increasing oil stove profits for many dealers. They will do the same for you. Mail the coupon today for details of our special proposition

THE BECKWITH COMPANY, Dowagiac, *Michigan*

"Round Oak Folks" *Established 1871*

ROUND OAK OIL RANGES

Round Oak Heating Systems, Round Oak Gas, Coal and Combination Ranges, Round Oak Oil Heaters and Oil Water Heaters

Round Oak Folks
The Beckwith Co
Dowagiac, Michigan

I want to know more about the Round Oak line of Oil Ranges, and your Exclusive Dealer Proposition

Name

Address

City State

Vapo oil range establishes new quality and economy standards—32 to 36 hours heat from 1 gal. kerosene

No odor
No wicks
No noise
No soot
No smoke
Nothing to smart the eyes

THE beauty of this splendid oil range pleases every woman. It is so much finer in design and construction than she ever dreamed an oil range could be made.

It is the last word in substantial last-for-ever construction. Burner is as easily regulated as a gas range burner—flame turns up and down, from full heat to simmering heat. Valves are safe-guarded against accidental turning or shifting.

The Vapo burner produces a clear blue flame that is sootless, smokeless, noiseless, and odorless, gives a quick powerful heat. It is a revelation in the efficient use of oil. *Burner is guaranteed for the life of range.*

Roomy Bolo ovens built in. Large cooking tops with electro-steel grids. Generous size oil tank, out of the way—yet easily reached. Range sets flush against the wall.

No matter what you now handle you can sell Vapo Oil Ranges to advantage. Vapo will put new life in your oil stove business and bring in real profits—all the year.

But, get the whole story. Write at once in reference to exclusive representation plan. Line is complete, including oil water heaters. Write today and get complete information.

THE VAPO STOVE COMPANY, Lima, Ohio

Vapo

WORLD'S HIGHEST GRADE OIL RANGES

Say you saw it in GOOD HARDWARE

The "S & D Griffith" Automatic Drop Bottom Car

Used By Two of the Three Largest Coal Operations in America

We manufacture all kinds of mine cars. But we naturally recommend the S. & D. Griffith "Automatic" Drop Bottom Car most highly. This car has so many points of superiority over any other type of car that we shall not attempt to enumerate them here. We have, however, prepared a "dope sheet" on the car which we would like to put into the hands of every user or prospective user of a mine car. The "dope sheet" gives a full description of the car, pictures of the standard types and full explanation of the automatic operation of the doors. It gives also names of a number of mines now equipped with the "Automatic" car.

This is truly an automatic car. The doors are opened, the load discharged and the doors closed automatically—No uncoupling—No tipple help—No delays—Motor keeps moving—Cars unloaded 25 to 35 per minute.

Some More Attractive Features

No expensive tipple or dumps are required. The automatic car can be used wherever an end dump car can be used, with the added advantage to the automatic that it requires only a simple bin, hopper or chute. Less tipple height is required, which means less breakage of coal and a big saving in cost.

A car of large capacity can be had with little height and low center of gravity. Side members of underframe are structural steel channels and end members are steel castings. Steel bumpers and spring draw heads make the car complete.

REMEMBER THIS

(1) They operate perfectly
(2) The doors do not drop unintentionally.
(3) They do not leak coal
(4) They require practically no repairs
(5) They do not give trouble
(6) Every user is a booster

Two First National Units at N. Y. Biograph Studios

First National Pictures, Inc., will start production in the East at the Biograph Studios, October 20th. This important announcement, marking a significant development in the growth of the producing and distributing organization, was made yesterday by Production Manager Richard A. Rowland, who some months ago declared in favor of eastern production near the business headquarters of the company

Earl Hudson, whose success as a producer during the last year has ben phenomenal, will be in charge of production at the Biograph Studios. He is due in New York on the 18, accompaied by his staff and a number of the players cast for the initial production. Among those coming East with Mr. Hudson are Marion Fairfax, editor-in-chief; her husband; Tully Marshall; Fred Stanley, publicity representative for First National units; Lambert Hillyer, director; James Van Trees, cameraman; Doris Kenyon, Anna Q Nilsson, Ben Lyon and Milton Sills. Director John Francis Dillon is already in New York prepared to start on his first eastern assignment.

H. H. Bruenner will be associated with Mr. Hudson in the handling of production at the Biograph studios, where two units will be installed. Mrs Bruenner has had many years of experience in the picture business. Before entering the new York offices of First National as assistant to Mr. Rowland, about one year ago, he managed the Samuel Goldwyn-George Fitzmaurice company on the trip to Italy for the making of "The Eternal City." The perspective of the company's operations gain I through intimate association with production activitits and close contact with leading exhibitors has given Mrfl Bruenner an unusual knowledge of box office values that should be in a picture.

Al Rockett, who in association with his brother Ray, produced the sensationally successful production "Abraham Lincoln," will become Mr. Rowland's assistant. Mr. Rockett has revealed a broad knowledge of motion picture production along with exceptionally sound judgmnet.

The first two productions scheduled for Biograph Studios are "Interpreter's House," a story of New York society life by Struthers Burt, and "One Way Street," a new novel by Beale Davis which is having a big sale. The casts for these pictures have not been revealed, but it is known that Milton Sills is to play a leading role in "Interpreter's House."

First National is now in the unusually position of maintaining production centers in both the East and West, making it possible to film a story in the section of the country best suited to the action For the present, at least, Colleen Moore will remain on the Coast with June Mathis, editor-in-chief of her pictures. Edwin Carewe also will be located in the West for the time being.

* * *

GRIFFITH TO REMAIN WITH UNITED ARTISTS

It now looks as though the David W Griffith-Famous Players deal is off. It is reported that Mr. Griffith will start work on another picture for release through United Artists. The picture will be made at Griffith's Mamaroneck, N. Y., studios

Mr Griffith returned from Europe a short time ago and at that time it was announced that owing to the difficulty of financing his pictures, he would make a series for Famous-Players

This announcement caused a sensation in picture circles and telegrams, rumors and denials were floating about for several weeks.

* * *

J. G. BACHMANN NOW WITH SCHULBERG

J. G. Dachmann, distribution head of D. P. Schulberg Productions, Inc., announced this week the appointment of Mack D. Weinberger as Sales Manager.

Mr. Weinberger is one of the best known sales figures in the industry, through long association with the D. W. Griffith organization, Associated Exhibitors and other prominent distributors, as exchange manager, special representative and Director of Sales.

Schulberg Productions' new Sales Manager enters upon his new duties in a strongly optimistic frame of mind He has just completed a tour of the principal exchange centers of the country in the interests of the D. W Griffith service and he comes back differing from those pessimists who see nothing but dark clouds on the horizon.

Especially is he enthusiastic about the opportunities for the better class of independent product.

"Conditions are not radically different from what they always are," declares Mr. Weinberger. "You will always find pessimists and optimists but when you finally analyze their feelings and the causes you come to the question of pictures. It is always a matter of product

First National Production Executives—Reading Left to Right: Richard A. Rowland, General Manager of Productions, First National Pictures, Inc.; Al Rockett to assist Mr Rowland in management; H. H. Bruenner, who will be associated with Earl Hudson in handling production and Earl Hudson, in charge of Eastern Productions.

Tried and Proved Pictures

The Exhibitor View

vs. The Producers' Angle

Make Pictures With An Aim in View, the Only Way to Win Box-Office Success, Asserts One Exhibitor

AN exhibitor was doing some curb-stone panning recently, and meeting with such enthusiastic approval from his listeners-in that a passer-by would think that th. Knock-er's Club" was in executive session, and were holding a meeting on the film curb

Anyway, what he had to say might just be expressive of what many other exhibitors are thinking

The producers and their pictures were the subjects for the one-man debate—and there were no "resolve's" nor "whereas's" to his talk. He wasn't altogether destructive without being constructive, yet his side was definitely negative—and there was no affirmative.

To a "fare-thee-well" all the producers and sundry were placed on the griddle and panned brown.

"If they only would make pictures with some aim in view," was the trend of his talk "I'm not beyond the point where I talk about the money I lost on this picture or on that," he went on to say, recently I lost so heavily on one, partly by overpaying, and partly by underfilling my house, that I must call a halt

"No one in business can continue to pick losers every time—and while sometimes when you bet on a horse race and you lose, you feel sure that it was a 'fixed' race—yet in business you expect the favorites to win hands down.

TAKE for instance a recent picture, we'll call it "Satin and Satan," well it looked like a winner to everybody A Broadway first run house was one way of looking at the future of it and so I strolled over, paid my eighty-five cents, and sat down I must confess it had me

It interested the people around me. And, from all angles you would say that it was due for a run. The house was well filled and the line outside was I should say straggling but more or less continuous

"I called up the district manager, and after being stunned over the cost—booked the feature anyway

"In my town, fifty nine thousand, my house gets the cream, and is looked up to for the real goods. So to insure full houses and plenty of box office activity, I plastered the country side with

In this instance the Rex Theatre, Eugene, Ore., arranged this book tie-up display during their showing of the First National version of the novel, "When a Man's a Man."

posters large and small, ran ads in all the papers, prepared several ingenious ballyhoos that played up the Devil and the Lady characters and so forth

"Spent a lot of money, too much I guess, but looked for the real results

WHAT'S that, did I get it? Yes, if you expect the neck to be the proper receiving center. I sure caught it in the neck all right—and it is the last time that I knowingly replace my collar with an axe

"Funny thing, on thinking back, my advertising sure paid for the investment I made on it—but the picture couldn't draw smoke out of a bad cigar.

"Summing it all up—the picture was O K. for New York—but double N G. for Countyport. The national fame of the star was no apparent attraction: the thousands of books the author wrote. no seeming invitation to my theatre. My people won't digest that sort of fodder. "I'm through!"

All around him there was silent cheering and knowing looks exchanged by others who, too, had been touched by the flaming brand. The rest of the talk I didn't get verbatim, but the substance is here, for others took up his plaint from where he left off.

IF only producers would look ahead a little, the smaller cities would be able to capitalize proportionately upon their investments in feature pictures—but the trade of the small towns is so completely overlooked in a large majority of the pictures turned out. Except by some independents.

While the country at large don't all want Westerns—they do have certain standards that it would be just as easy to anticipate, as not.

One test producers might make, they asserted, should be to ask the question: "Will this picture ever become a 'Tried and Proved' film?" Will it be able to show the country over—and then go back again for a return engagement a year later?

This seems rather sensible.

The end would thereby always justify the means

If the picture were good, if the feature was filmed with this one idea in mind, the motion picture industry would well profit by the departure. Better pictures would result, with larger profits to the producers and a similarly, proportionately larger share for the exhibitors.

More continued activity of the films would doubtless result, and the screen fans would willingly see the revival of a picture as gladly as the first showing just as it is customary to re-read a good book, if it just happens to appeal to us

Rather than play pictures of unknown quality, it would be far more advisable, they concluded, for exhibitors to play features whose box-office values are known.

STUNTS *That Are Building Patronage*

"21's" Chalked All Over Town Had Sandusky Guessing

When George J. Schade showed "Twenty-One" at the Schade Theatre Sandusky, Ohio, he attracted attention to his offering in a manner appropriately termed "Schadesque" by the Sandusky press.

A week before "Twenty-one" was announced as a coming attraction Schade sent two members of his advertising force into the highways and byways—at night, of course—with a liberal supply of ordinary chalk and instructions to write the numerals "21" everywhere and anywhere.

The result was that when Sandusky awoke the next morning it was to be mystified as never before. There were 21's on the sidewalks, the pavements, fences, doors, the sides of buildings of all kinds and descriptions; in fact there were 21's wherever one happened to look.

And to make matters even more perplexing there was one bigger than the rest, on the door of the main entrance to the Sandusky police station.

Everything from the Ku Klux Klan to mischevious boys were blamed but, when it came to evidence—there was none.

* * *

Winner of Bathing Contest Poses in Shop Window

Unique exploitation and presentation methods were put into effect by the Wells Theatre, Norfolk, Va., in connection with the showing of "Miami," the Betty Compson Special released by Producers Distributing Corporation.

The orchestra wore bathing suits, and was directed by Miss Uhler, the Southern beauty who recently won the Norfolk bathing beauty contest, whose costume was the one-piece bathing suit which she wore at the bathing beauty contest.

Miss Uhler also posed for one hour a day for three days in the afternoon and for one hour three times a night in the show window of one of the largest stores in Norfolk.

The stunt proved a splendid bit of exploitation and resulted in crowded houses during the entire showing of the Betty Compson feature, "Miami," at this theatre.

An ingenious street ballyhoo idea recently was arranged for Selznick's production "Daughters of To-day". Each girl in the line wore a single letter of the title and then strolled through the main streets of the town in single file and attracted a crowd wherever they walked.

Tie-Ups on East Side, N. Y.

In the heart of New York's lower East Side, where things are pretty well congested, there's a theatre— "The Clinton" —which is worthy of particular mention because of the energetic methods being used by the management to make it a success.

When Warner Bros. production "Babbitt" was shown at the Clinton Theatre, New York City, a radio window tie-up brought the showing attention-compelling publicity.

First of all the house is playing the best attractions it can get—and is paying rental prices which justify the interests which producers and distributors in general are taking in it. And after that, Jack Cohen, the manager, is constantly on the alert to do the things which he thinks will let the folks in his neighborhood know that he has something worth while to offer for entertainment.

The accompanying photograph shows a radio window tie-up which Mr. Cohen arranged in conjunction with the recent presentation of the Warner Bros. "Babbitt." The lead was given him in work which was done by the Warner home office when "Babbitt" played the Rivoli some weeks ago. His interest in the project was sufficient to have him secure a big cut-out of Willard Louis, featured member of the "Babbitt" cast, have the necessary window card made, arrange with the radio merchant, and personally dress the window.

It is properly a part of this narration to say that "Babbitt" did a great deal more business than is considered average at the Clinton—and the lower East Side of New York where one would expect to find complete understanding of the basic plot of a picture which deals entirely with small-town idiosyncracies.

Mr. Cohen, of the Clinton, was one of the first exhibitors in the country to make practical and definite use of the National Tie-Up idea which Exhibitors Trade Review developed for the motion picture industry.

When the plan was inaugurated with the Warner Bros. "Beau Brummel" he got in touch immediately with a number of the national advertisers who had signed up and his entire neighborhood was covered with tie-up advertising during his "Beau Brummel" engagement with the inevitable result that he did a tremendous business.

Pathe News

Scores Beat With ZR-3 Pictures

PATHE NEWS scored another record for fast work on Wednesday, October 15th, when its views of the arrival of the Z-R 3, America's new Zeppelin, over New York City filmed that morning both from the air and from vantage points on the roofs of sky-scrapers, reached the various Broadway theatres in time for their opening shows

Behind this achievement lies an unusual story of organization and enterprise that would do credit to an Army staff planning a major campaign. Late Tuesday the Z-R 3 was reported as proceeding slowly down the Coast in a dense fog. The actual time of her arrival in the metropolitan zone could not be determined. Under the circumstances the Pathe News cameraman had to be placed in the most strategic positions and await developments with everything in readiness to speed to better vantage points by fast aeroplane or motor as conditions would demand. At the Pathe News headquarters word was received from various sources at frequent intervals as to the progress being made by the great airship in its flight through the darkness towards New York. Tuesday night and the early hours of Wednesday found the entire Pathe News camera staff alert at their various posts at headquarters and in the field. At Port Washington, L. I., cameraman Harde kept constant vigil in a speedy seaplane. At Lakehurst, N. J., the landing place of the huge Zeppelin, cameraman Wetzel was stationed waiting word from headquarters that would send him into the air to intercept the Zeppelin at the first possible moment.

Dawn found the great ship near New London, Conn., heading for Mitchel Field, Long Island. Work from Pathe News headquarters brought Harde on the wing from Port Washington, and at the same time Wetzel took off from Lakehurst and headed toward New York, Pathe News cameraman set up their equipment along the battery wall at the lower end of Manhattan and atop of the Municipal Building and other skyscrapers. As a result from the moment the Z-R 3 reached Mitchell Field at seven o'clock Wednesday morning until her arrival over the city at 7:30 and her later trip to Lakehurst, where she arrived about ten o'clock, Pathe News cameramen followed every phase of her historic flight. Both Harde and Wetzel in their planes escorted the American Zeppelin in her spanning of the Island of Manhattan and subsequently accompanied her on the last leg of her transatlantic flight to Lakehurst, where they took views of her landing from the air while other Pathe News cameramen stationed on the ground took close-ups of the landing crew at work.

Upon the completion of the views the negatives were rushed by airplane to West Side Park, N. J., and from there to the Pathe News laboratory in Jersey City by fast motor. Prints were dispatched as fast as they were completed to various parts of the country, those destined for the Broadway screens reaching the various theatres in time for the opening of the shows.

Pathe News also secured many absorbingly interesting pictures taken at different points during the flight from the mammoth ship itself. In addition to these there are some interesting views of events that happened when the intrepid air navigators left Freidrichshafen.

* * *

EXCHANGE MANAGER WEDS

As the outcome of an introduction of a few weeks ago, H. L. Levy, manager of the Associated Pictures exchange in Albany, was quietly married last Friday when he took Anna J. Herie of the Capitol city as his bride. Mr. Levy came to Albany about three months ago, a bachelor, and probably with every prospect of remaining so But when he met Miss Herie the outlook quickly changed. Film Row was kept in ignorance of the wedding until the day after it occurred.

'SUNDOWN' DAY IS OCT. 26

First National's Distribution Department has arranged to release its big Western special, "Sundown," nationally on Sunday, October 26. On that date "Sundown" will be shown in a majority of the key city points for extended engagements

"Sundown" will be marketed as an Eschmann Month Special. Prints are now being made and will be rushed to all First National branches. Posters and other accessories are already in the exchanges. The Earl Hudson scenario for the picture has been made into a novel by Walter F. Eberhardt and published by Grosset & Dunlap who have made a specialty in publishing photo play editions of novels that have been picturized. The publishers will cooperate with First National in exploiting the picture through window displays of the novel in all cities where "Sundown" is shown just preceding and during the engagement.

In addition, First National is launching a national "Sundown" advertising campaign of its own which will include advertisements in the *Saturday Evening Post* and other media

* * *

ASHTABULA "BLUE"

In compliance with the demands of the ministers of the city to close theatres on Sundays, the municipal authorities went a step further and closed everything but the street cars, water works system, and the city lighting system

Rudolph Valentino and Nita Naldi play very interesting roles in Paramount's "The Sainted Devil," under sunny skies and in South American settings.

Exploitation Ideas

Showmen Publicity Schemes That Build Up Big Audiences

STOCKINGS and hairbob were the two channels through which were secured the cooperation of Arbaugh's department store in Lansing, Mich., when Gloria Swanson in "Manhandled" played the Gladmor theatre.

Arbaugh's gave the entire window to the hosiery, and featured the Gloria Swanson Bob in their Ladies' Hair dressing Department. In the window display, the window dresser costumed a wax model completely in "Humming Bird Hosiery."

In addition to this splendid co-operation, the store took a fair sized ad in the Saturday before opening paper, playing up the Gloria Swanson Bob and the hosiery, not overlooking to mention the showing of the picture at the Gladmor theatre.

* * *

POSTERS

Douglas MacLean is being cleverly posterized. The designer of these posters has held to a true psychology of the picture in each instance. At the same time he has secured a dominating presentation of his star's most likeable and smiling face, which has gotten to be a trade mark for MacLean's unique brand of humor.

It is simple enough to design a poster for a star who effects eccentricity in dress or conduct on the screen, but Douglas MacLean resorts to none of these burlesque tricks. He always dresses in the latest style, his hair is never ruffled, his trousers never bag at the knees nor drag on the ground over a pair of ridiculous brogans. His face is his own and he wears his own clothes and they always fit.

For "Going Up" he was pictured as the pleasing victim of a roguish boy cupid driving a baby plane and shooting cupid arrows at the star's smiling visage, the while said cupid did a bit of sky writing, showing the name of the picture in smoke letters across the sky. It was a happy way to give an idea that the feature was an airplane comedy with a pretty romance and thrills to entertain the fans.

In the screen version of "The Yankee Consul" the poster man was just as clever in devising a striking idea. He combined the story with the comedy smile of the star by superimposing the MacLean face over an affectionate American eagle wearing one of Uncle Sam's old fashion beaver top hats. The comic eagle seemed to be taking the star under its wing with a sort of loving protection. That was the spirit of the story.

One might expect the poster man would have his back to the wall, as it were, when it came to an appropriate poster for the abstract declarative title of "Never Say Die." But he had an inspiration when he decided to introduce the saucy cupid flapper standing on the stars shoulder whispering a love message into his attentive ear. It is labelled "live, love and laugh," which, with the pictured suggestion, is the entire spirit of the action, romance and run in this comedy version of Willie Collier's great stage success.

Reproduction of the "Arabella," flagship of "Captain Blood" used as one of the Vitagraph floats in the Los Angeles "Greater Movie" pageant. Filled with beautiful bathing girls it later won second prize at the annual Venice Bathing Parade.

* * *

'FLAP'-JACK

Frank Holland, Manager of the Victory Theatre, Evansville, Ind., staged a flapper contest in connection with the showing of First National's "The Perfect Flapper."

Cash prizes were offered for the girls adjudged the most perfect flappers. The winner of first prize, was a twelve year old girl, Edith Simms, whose portrait was printed in the Evansville dailies in connection with the announcement of the prize winners.

The advance and current newspaper publicity on the contest was of great value in bringing the picture to the attention of the public. The result was that receipts for the week went up considerably.

* * *

GET ABOARD

Somewhat like the coloring contest that has been getting good results for "The Wanderer of the Wasteland," is the drawing contest that has been getting over in New England for "The Covered Wagon." The contest is open to all school children under twelve.

To win a prize they are required to make a drawing of the covered wagon as it appears in the production. Pencil, crayon, water color, or any medium preferred by the artist is permitted by the judges.

The best drawing usually receives a set of forty stills and a couple of tickets to the wagon, with the other two prizes graduated down accordingly.

* * *

WITNESSES

If the newspaper readers of your town should open their favorite gazette and read that real business men were aiding the search for witnesses of the Shooting of Dan McGrew, you know the shock it would give them! Then imagine the jolt to the readers of the Daily Journal in Beaumont, Texas, when they read this headline:

Beaumont Witnesses Summoned To Shooting of Dan McGrew

Circumstantial Evidence Plays Important Part in Noted Tragedy; Beaumont Business Men Aid in Search of Witnesses

And here was the story that followed:

Efforts to locate witnesses for the Shooting of Dan McGrew received added impetus when many business men of the city agreed to take active part, and it is expected that when all the facts and events leading up to the

tragedy are visualized, there will be many thrills and sensations. It is admitted that the central figure in this mighty conflict of human emotions, known to some as Lou Lorraine, has a remarkable personality and no doubt will exert a strong influence on the many witnesses that will be present.

Seldom has it been that business men have displayed such keen interest in an affair of this kind that they have voluntarily offered their aid in locating these witnesses. They have therefore inserted in their advertisements in this paper the names of residents of Beaumont, picked at random from the telephone directory, to whom they will give free tickets to witness The Shooting of Dan McGrew, which opens at the Liberty theatre tomorrow!"

Window tie-ups were arranged with music stores on various instruments, with restaurants, jewelry stores on Richelieu pearls, bookstores on the photoplay edition, drug stores on perfumes, Pond's Cold Cream, and Gainesborough powder puffs; and with the Victor people on the Barbara La Marr recorded recitation of the Robert W. Service poem.

Cut-outs were extensively used in the lobby and the "canned" recitation of the Service Poem was played in the lobby continuously. The instrument for this use was donated by the Victor people.

* * *

WARNING!

Manager H. Browning of Gordon's Olympia Theatre, New Haven, has used another advance exploitation scheme to interest dwellers in that city in the First National Special, "The Sea Hawk."

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Exploitation Ideas

Showmen Publicity Schemes That Build Up Big Audiences

STOCKINGS and hairbob were the two channels through which were secured the cooperation of Arbaugh's department store in Lansing, Mich., when Gloria Swanson in "Manhandled" played the Gladmor theatre.

Arbaugh's gave the entire window to the hosiery, and featured the Gloria Swanson Bob in their Ladies' Hair dressing Department. In the window display, the window dresser costumed a wax model completely in "Humming Bird Hosiery."

In addition to this splendid co-operation, the store took a fair sized ad in the Saturday before opening paper, playing up the Gloria Swanson Bob and the hosiery, not overlooking to mention the showing of the picture at the Gladmor theatre.

* * *

POSTERS

Douglas MacLean is being cleverly posterized. The designer of these posters has held to a true psychology of the picture in each instance. At the same time he has secured a dominating presentation of his star's most likeable and smiling face, which has gotten to be a trade mark for MacLean's unique brand of humor.

It is simple enough to design a poster for a star who effects eccentricity in dress or conduct on the screen, but Douglas MacLean resorts to none of these burlesque tricks. He always dresses in the latest style, his hair is never ruffled, his trousers never bag at the knees nor drag on the ground over a pair of ridiculous brogans. His face is his own and he wears his own clothes and they always fit.

For "Going Up" he was pictured as the pleasing victim of a roguish boy cupid driving a baby plane and shooting cupid arrows at the star's smiling visage, the while said cupid did a bit of sky writing, showing the name of the picture in smoke letters across the sky. It was a happy way to give an idea that the feature was an airplane comedy with a pretty romance and thrills to entertain the fans.

In the screen version of "The Yankee Consul" the poster man was just as clever in devising a striking idea. He combined the story with the comedy smile of the star by superimposing the MacLean face over an affectionate American eagle wearing one of Uncle Sam's old fashion beaver top hats. The comic eagle seemed to be taking the star under its wing with a sort of loving protection. That was the spirit of the story.

One might expect the poster man would have his back to the wall, as it were, when it came to an appropriate poster for the abstract declarative title of "Never Say Die." But he had an inspiration when he decided to introduce the saucy cupid flapper standing on the stars shoulder whispering a love message into his attentive ear. It is labelled "live, love and laugh," which, with the pictured suggestion, is the entire spirit of the action, romance and run in this comedy version of Willie Collier's great stage success.

Reproduction of the "Arabella," flagship of "Captain Blood" used as one of the Vitagraph floats in the Los Angeles "Greater Movie" pageant. Filled with beautiful bathing girls it later won second prize at the annual Venice Bathing Parade.

* * *

'FLAP'-JACK

Frank Holland, Manager of the Victory Theatre, Evansville, Ind., staged a flapper contest in connection with the showing of First National's "The Perfect Flapper."

Cash prizes were offered for the girls adjudged the most perfect flappers. The winner of first prize, was a twelve year old girl, Edith Simms, whose portrait was printed in the Evansville dailies in connection with the announcement of the prize winners.

The advance and current newspaper publicity on the contest was of great value in bringing the picture to the attention of the public. The result was that receipts for the week went up considerably.

* * *

GET ABOARD

Somewhat like the coloring contest that has been getting good results for "The Wanderer of the Wasteland," is the drawing contest that has been getting over in New England for "The Covered Wagon." The contest is open to all school children under twelve.

To win a prize they are required to make a drawing of the covered wagon as it appears in the production. Pencil, crayon, water color, or any medium preferred by the artist is permitted by the judges.

The best drawing usually receives a set of forty stills and a couple of tickets to the wagon, with the other two prizes graduated down accordingly.

* * *

WITNESSES

If the newspaper readers of your town should open their favorite gazette and read that real business men were aiding the search for witnesses of the Shooting of Dan McGrew, you know the shock it would give them! Then imagine the jolt to the readers of the Daily Journal in Beaumont, Texas, when they read this headline:

Beaumont Witnesses Summoned To Shooting of Dan McGrew

Circumstantial Evidence Plays Important Part in Noted Tragedy; Beaumont Business Men Aid in Search of Witnesses

And here was the story that followed:

Efforts to locate witnesses for the Shooting of Dan McGrew received added impetus when many business men of the city agreed to take active part, and it is expected that when all the facts and events leading up to the

tragedy are visualized, there will be many thrills and sensations. It is admitted that the central figure in this mighty conflict of human emotions, known to some as Lou Lorraine, has a remarkable personality and no doubt will exert a strong influence on the many witnesses that will be present.

Seldom has it been that business men have displayed such keen interest in an affair of this kind that they have voluntarily offered their aid in locating these witnesses. They have therefore inserted in their advertisements in this paper the names of residents of Beaumont, picked at random from the telephone directory, to whom they will give free tickets to witness The Shooting of Dan McGrew, which opens at the Liberty theatre tomorrow!"

Window tie-ups were arranged with music stores on various instruments, with restaurants, jewelry stores on Richelieu pearls, bookstores on the photoplay edition, drug stores on perfumes, Pond's Cold Cream, and Gainesborough powder puffs; and with the Victor people on the Barbara La Marr recorded recitation of the Robert W. Service poem.

Cut-outs were extensively used in the lobby and the "canned" recitation of the Service Poem was played in the lobby continuously. The instrument for this use was donated by the Victor people.

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An Announcement

B. P. Schulberg Takes Pleasure in Sponsoring the Triumphant Return of a Great Screen Star

READ WHAT SCREENLAND SAYS

EDITORIAL

ALICE JOYCE has come back. Famous Players-Lasky has offered her the feminine lead in THREE BLACK PENNYS, Joseph Hergesheimer's greatest novel. And at the same time, Warner Brothers approach her with offers to feature her in Edith Wharton's prize-winning novel, THE AGE OF INNOCENCE, one of the screen plums of the year.

Here's a prediction—the seasoned artist, *Alice Joyce*, will make a far greater success than the old Alice ever enjoyed.

B. P. Schulberg *Presents*

Alice Joyce

IN

"WHITE MAN"

BY GEORGE AGNEW CHAMBERLAIN

A GASNIER Production

WATCH FOR FURTHER ANNOUNCEMENT

Preferred Pictures

Distributed by

B. P. Schulberg Productions, Inc.

J. G. Bachmann, Treasurer — 1650 Broadway, New York

Foreign Distributors: Export and Import Film Co.

Novelty---Thrills--Intriguing Romance

"THE MAN WITHOUT A HEART"

A BANNER PRODUCTION

with

Kenneth Harlan
Jane Novak
Faire Binney
David Powell

Kenneth Harlan

Jane Novak

BANNER PRODUCTIONS, Inc.
1540 BWAY N.Y.C.

FOREIGN DISTRIBUTORS
INTER-OCEAN FILM CORP.
218 W. 42ND ST. N.Y.C.

Directed by
BURTON KING

MAKE THIS YOUR *BANNER* YEAR

A Record "Buster"

Buster Keaton in "The Navigator," a Metro-Goldwyn picture, broke the Capitol Theatre's record for a single day's receipts last Sunday, October 12th, by doing a business of $14,796.70. This surpasses any previous Sunday, New Years Day, Thanksgiving Day, Washington's Birthday, or any other holiday in the history of this theatre.

And on Monday the receipts were $13,184.85.

The total for Sunday and Monday then is $27,981.55 which is certainly a Record "Buster."

Edward Dowes

Managing Director
Capitol Theatre, N.Y.

It's got everything says this critic!

from Motion Picture News

SUMMARY. Heart interest, action, thrills, romance—all are combined in this rather unusual offering. The cast is excellent and Marc MacDermott gives us another notable character portrayal. The action gathers speed as it goes along and the climax is a wow.

—and it sure has!

M. C. LEVEE *presents*

In Every Woman's Life

with

Virginia Valli Lloyd Hughes,
Stuart Holmes Marc MacDermott,
George Fawcett, Ralph Lewis

Directed by Irving Cummings

From OLIVE WADSLEY'S *novel*—"BELONGING"

Screen play by ALBERT SHELBY LEVEE

FIRST NATIONAL PICTURES

The Gattling Gun of sure fire hits!
A FIRST NATIONAL Contract!

Members of Motion Picture Producers and Distributors of America Inc.—Will Hays *President*

"EMPTY HEARTS" will mean FULL HOUSES!

"Empty Hearts"

A BANNER PRODUCTION

WITH
CLARA BOW
JOHN BOWERS
LILLIAN RICH
CHAS. MURRAY

DIRECTED BY
AL SANTELL

PRODUCED BY
BEN VERSCHLEISER

DISTRIBUTED BY
BANNER
PRODUCTIONS, INC.
1540 BROADWAY N.Y.C.

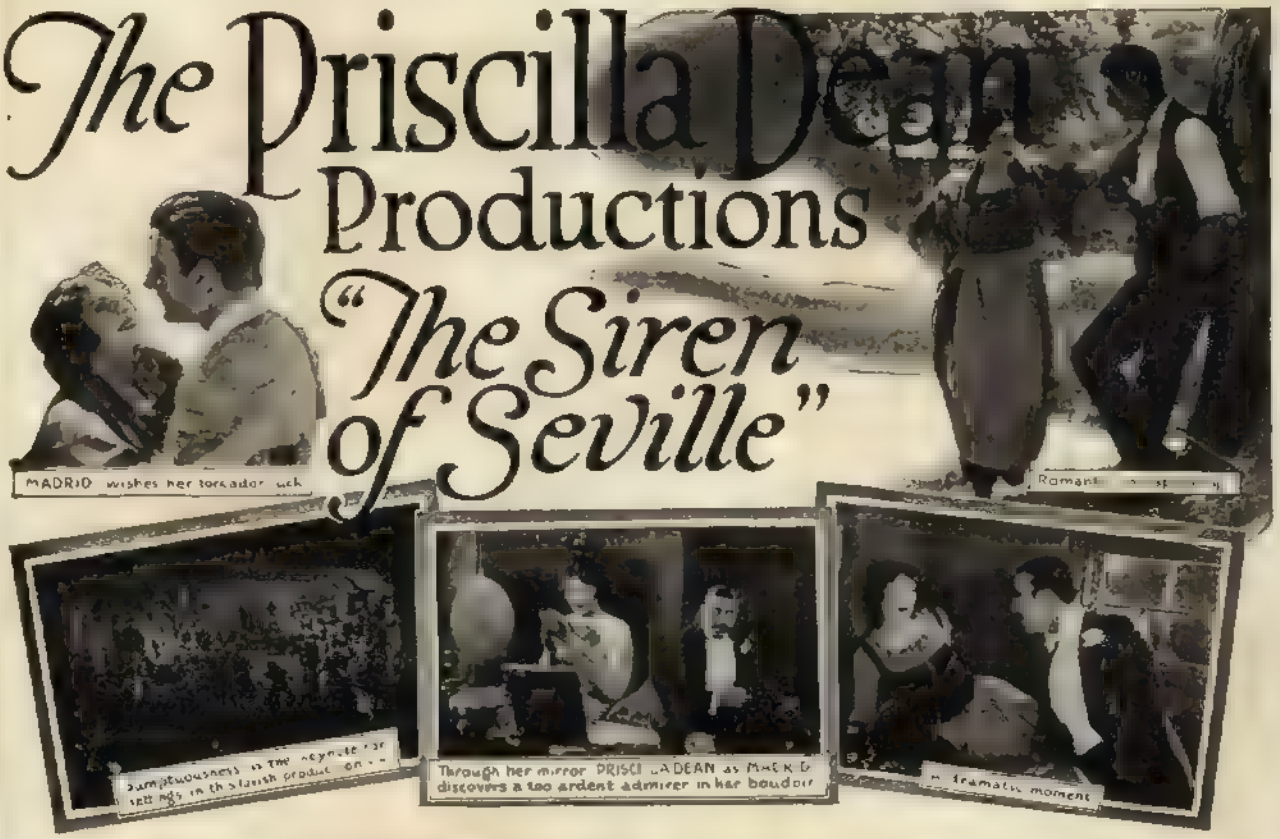
FOREIGN DISTRIBUTORS
SIMMONDS-KANN ENTERPRISES, Inc.
220 West 42nd St. N.Y.C.

MAKE THIS YOUR *BANNER* YEAR

PRODUCERS DISTRIBUTING CORPORATION

The Priscilla Dean Productions

"The Siren of Seville"


MADRID wishes her torsador luck
Romantic
Through her mirror PRISCILLA DEAN as MARIA discovers a too ardent admirer in her boudoir
a dramatic moment

SPAIN is the land of romance, where blood runs hot with the high emprise of adventure, intrigue and the highly-colored conflict of elemental passions.

"The Siren of Seville," with the dynamic, emotional Priscilla Dean in the stellar role, is all that the title implies —a pulse-quickening, exotic romance of Sunny Seville involving a passionate Carmen type of heroine and the real kings of the Spanish people—the monarchs of the bull-ring.

Here is a stupendously magnificent production, on which neither money nor constructive brains have been spared to achieve the very acme of excellence. The story is by H. H. Van Loan, who wrote Miss Dean's two previous successes, "The Virgin of Stamboul" and "The Wild Cat of Paris."

Allan Forrest, who made a great success as Mary Pickford's leading man in "Dorothy Vernon of Haddon Hall"; Stuart Holmes, Claire DeLorez, Bert Woodruff and Mathew Betz, complete a brilliant cast.

Directed by Hunt Stromberg and Jerome Storm.

And "A Cafe in Cairo"

THE mystic land of the Nile, where once the incomparable Cleopatra wove her magic spell, is visualized with all its lure and mystery, while a pulsing drama of adventure and love is unfolded with rare artistry.

The elusive melodies of native instruments mingle with the silken swish of the diaphanous garments of the sinuous dancing girls in the House of Stars . . . . A young American on a secret diplomatic mission . . . . the entrancing beauty of Naida, the fascinating Houri . . . . moonlight and the lure of the desert.

This is the setting for Priscilla Dean's second production—a story that intrigues and fascinates—with an ideal role for the screen's incomparable emotional actress.

Adapted by Harvey Gates from the novel by Izola Forrester, who wrote "The White Moth." Directed by Chet Witney.

The entire production filmed under the personal direction of Hunt Stromberg.

Foreign Distributor: Wm. Vogel Distributing Corp.

GLORIA
SWANSON
"HER
LOVE STORY"
AN ALLAN DWAN PRODUCTION
A Paramount Picture

WE have seen Miss Swanson's second Famous Forty picture, "Her Love Story". It is as big as "Manhandled", if not bigger. The poignantly human story of a love behind a throne. Ian Keith, George Fawcett, Mario Majeroni and other favorites in the cast. In every respect a super-production. Another great opportunity for you to cash in on Miss Swanson's amazing box-office popularity

GLORIA SWANSON
"HER LOVE STORY"

AN ALLAN DWAN PRODUCTION

By Mary Roberts Rinehart. Screen play by Frank Tuttle

A PARAMOUNT PICTURE

A tense scene in which Seena Owen rises to great dramatic heights and furnishes one of the thrills of the picture.

Lionel Barrymore and Seena Owen give their best to this production. The result is one of Chadwick's best features.

Suspense is the keynote in "I Am the Man." Below is the court room scene in which the climax is skilfully brought about.

Lionel Barrymore At His Best in 'I Am The Man'

Surrounded by a Strong Supporting Cast, Barrymore Makes This Latest Chadwick Feature a Classic

Groups Booked

Big Syndicates Lead in Selection of their New Productions

DETAILED reports from distributors of Warner Bros. pictures throughout the country indicate that the Warner Twenty for 1924-25 are being signed up rapidly by many leading theatres and circuits. Sale of the product has already progressed to such an extent that Warner Bros. executives feel confident that the firm's business for the new season will be the biggest in its history. In Greater New York City the Strand is on the list together with the B. F. Keith Metropolitan Circuit, the B S. Moss theatres, and Keeney's circuit. Proctor's theatres in Yonkers, Albany, Schenectady, and Troy are some of the important houses in the state, outside of New York City. Others are the Park in Newburg, the Piccadilly in Rochester, the Empire in Syracuse, the Avon in Utica, and the Majestic in Elmira. New Jersey contracts include the State, Jersey City; the Newark, the Regent, Paterson; the Lyceum, Bayonne; the Lyric, Hoboken; the Montauk, Passaic; the Montclair, Montclair; the Roosevelt, West Hoboken; the State, Union Hill; and the Bijou and Capital, Atlantic City.

The Rialto will play the product in Washington, D. C., the Metropolitan in Baltimore, and the Modern-Beacon in Boston; Lowell, Springfield, Worcester, and Lawrence are on the list with the Merrimack Square, the Capitol, Poli's, and the Modern, respectively.

The Ohio bookings are outstanding with the following theatres: Stillman, State, Allen, and Circle in Cleveland; Capitol, Strand, and Walnut in Cincinnati; the State and Strand in Dayton; the Southern and Majestic in Columbus, and the Eastland in Portsmouth

In Maine the William Gray New England Circuit has been signed together with the Strand theatre in Portland.

The Rialto, Providence; the Strand, Pawtucket; Poli's, Bridgeport; the Strand, Hartford, and the Rialto, Waterbury, are early and important bookings in Rhode Island and Connecticut.

SCHULBERG TO START ANOTHER BIG ONE

One of the biggest pictures planned by B. P. Schulberg this season will be started this week when George Agnew Chamberlain's widely read novel, "White Man," will be put into production for release as a Preferred Picture. Mr. Schulberg believes that the unique jungle settings of this story will make it a real film novelty.

Olga Pritzlau has put the finishing touches on the adaptation and cameras will begin grinding at once. A few necessary interiors will be photographed first and then the entire company will be taken upon location for several weeks

Dorothy Devore, featured player who provides the dramatic thrills of "The Narrow Street," Warner Bros.' new production.

'FLAMING FORTIES' FOR HARRY CAREY

Hunt Stromberg's fifth production starring Harry Carey will be released under the title "Flaming Forties" instead of "The Man From Texas" as previously announced.

"Flaming Forties" will be an adaptation of the Bret Harte story "Tennessee's Pardner." It is now under production with Tom Forman directing, and is scheduled for release by Producers Distributing Corporation on December 7th.

NEW HEAD OF SPECIAL PRODUCTIONS FOR 1st NAT.

A. W. Smith, Jr., who has been placed in charge of the selling of First National's Special Productions by E. A. Eschmann, General Manager of Distribution, announces that his staff of salesmen who are devoting their entire time to the marketing of the Specials, will co-operate in putting Eschmann Month over

They will work with the managers of the exchanges in which they are working during the period of the Eschmann Month contest, without, however, detracting anything from the money rewards that the winning district and the three winning branches and the entire personnels of the latter will receive.

Walter Price will work with the sales force in the Washington, D. C., territory; C. W. Bunn in the Chicago territory; Stanley Hand, recently in the Indianapolis branch, with the St. Louis branch; H. Peters in Minneapolis; A. Hickox in Philadelphia and Tom Brady in Buffalo.

* * *

METRO-GOLDWYN PRODUCT IS SOLD

Fitzpatrick and McElroy, middle western exhibitors have closed with Metro-Goldwyn for the new season product 100 per cent, for their entire Michigan territory.

The deal has just been closed in Chicago by James R. Grainger, eastern sales head of Metro-Goldwyn, and W. C. Bachmeyer, district manager with headquarters in Cincinnati

Fitzpatrick & McElroy control over a dozen first class theatre in as many towns, with houses in Grand Rapids, Benton Harbor, Alpina, Travers City, Three Rivers, Manisstee, St. Joe, Cadillac, Ludington, Blue Island, Chicago Heights, and Harvey, Ill.

These towns will see all Metro-Goldwyn releases this season, including such special productions as "The Great Divide," "The Merry Widow," and others now in production.

* * *

FIVE FOR VALENTINO

J. D. Williams, president of Ritz Carlton Pictures, announced at a luncheon in Atlantic City, that Rudolph Valentino will make a series of five pictures for Ritz.

The first picture will be started early in November and the star expects to be able to complete two pictures a year.

The intrepid explorers pause at the gateway to "The Lost World." The First National picture of that name depicts the conflict of modern men with the ape-like beings and prehistoric monsters of a re-discovered continent. Lewis Stone, Bessie Love and Lloyd Hughes play the leading roles.

Lloyd Hughes and Bessie Love on the edge of the jungle in which the explorers of the unknown continent step back thousands of years in their surroundings.

"The Lost World" is peopled by strange creatures of frightful appearance. The monsters of antiquity have been reproduced for the First National picture which is heralded as a truly amazing accomplishment in the field of photo-drama. The part of the ape is played by "Bull" Montana with a most realistic make-up.

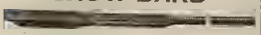
'The Lost World'

First National's Amazing Picture of Conan Doyle's Story About a Rediscovered Continent Peopled by Strange Men and Prehistoric Beasts

DIGGING BARS

"Oliver"—Tamp top digging bars; length, 6 feet; weight each, 16 pounds. Each $4.00

CROW BARS



Pinch point—Solid steel, assorted lengths; weight, 10 to 25 pounds. Per pound $0.15

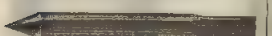
Wedge point—Solid steel, assorted lengths; weight, 10 to 25 pounds. Per pound $0.15

RAILROAD CLAW BARS

R. R. claw bars—Solid cast steel with heel; length, 5½ feet; weight, 30 pounds. Per pound $0.20

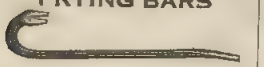
Open stock.

LINING BARS



Lining—Solid cast steel, assorted lengths; weights 16, 18 and 20 lbs. Per pound $0.10

PRYING BARS



Marshalltown, Handy Curved.

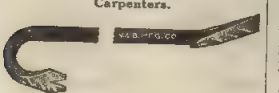
No. 5—"Handy," ½ inch octagon steel; length from point to curve, 11 inches; full length, 18¾ inches; chisel point on one end and claw point with curved heel on other end, both tempered. Very handy for opening crates, boxes, etc., and drawing nails. Handy in every household. Per dozen $3.00

Weight, per dozen, 9¼ pounds.

WRECKING BARS

V. & B. Brand.

Carpenters.



Just the tool for wrecking old buildings, ripping up flooring, etc., and an excellent box opener. An indispensable tool for carpenters, plumbers and mechanics generally.

Made of extra good steel, ends carefully tempered, polished finished claw and chisel, black finish body with claw end painted red.

Nos.	324	330
Length, inches	24	30
Diam. octagon steel, in.	¾	¾
Wt. per doz. about, lbs.	42	51
Per dozen $11.00		12.00

Open stock.

Carpenters' curved bars—Solid ¾ in. high carbon octagon tool steel, warranted; hardened at both points; claw end will pull any size nail.

⅝x18 inches; weight dozen, 30 lbs. Per dozen $8.50

¾x24 inches; weight dozen, 40 lbs. Per dozen $6.00

¾x30 inches; weight dozen, 50 lbs. Per dozen $7.00

Open stock.

CAR MOVERS

Atkins AAA.

Moves cars more rapidly and with less effort than many other car moving devices on the market. It has double grip spurs set at an angle and will work on any rail whether wet or greasy. Eliminates the liability of the car mover shipping while the operator has his weight on the lever resulting in most cases, in injury to the operator. Spurs made of case-hardened steel; four corners are machined and may be interchanged when one becomes worn. Remainder of metal parts of highest grade malleable iron. Handle of seasoned hardwood.

No. AAA—Length 63 inches; weight each about 20 lbs. Each.....$7.50

Open stock.

CAR MOVERS

Samson.

These car movers are guaranteed to work under any brake, and in all positions under car wheels where it is possible for any other mover to work, and will work faster, easier and farther to each stroke of the handle, than any other make of mover on the market.

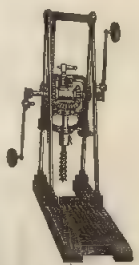
This mover is so constructed that the car wheel is forced to turn immediately instead of being lifted from the track as is the case with the ordinary pinch-bar. Equipped with adjustable speed device for light and heavily loaded cars.

Samson—Steel shoe and spur; iron parts, malleable iron; wood handle; weight, complete, 15 lbs. Each $10.00

Open stock.

BORING MACHINES

Millers Falls.



Wood bottom board, upright and angle rods, spindle and cranks made of steel. Bores vertically or at any angle from the vertical within an arc of 50°. Depth of hole regulated by stop. Auger removed from hole by pushing a latch and continuing revolution of cranks in same direction as when boring. Frame can be locked in topmost suspension automatically and released by pressure upon a thumb latch. Adjustable cranks regulating speed and power.

No. 145—Height, 25 inches; will bore 25 inches in depth; without auger; weight net, 28 lbs.; weight boxed, 45 lbs. Each $20.00

One in a wooden box.

The Sanderson-Cyclone Drill Company

ORRVILLE, OHIO

NEW YORK OFFICE: 30 CHURCH STREET

Prospecting Drills—Well Drills—Big Blast Hole Drills

Type

Cyclone Drills are of the portable churn drill type and may be equipped with either cable drilling tools or self-pumping hollow rod tools. The machines are built with gasoline, steam or electric power plants in traction or non-traction type.

Uses

In coal mining operations the most important uses of Cyclone Drills are as follows:

(1) Prospecting and testing the location and thickness of coal beds.
(2) Drilling wells for mine and camp water supply.
(3) Drilling holes into mines for drainage and ventilation purposes and for the introduction of steam, air, electric and water lines.
(4) Drilling blast holes for stripping overburden preparatory to open cut mining.

Prospecting

We believe we are safe in saying that 75% of the coal prospecting work in the soft coal regions of the states of Ohio, West Virginia, Indiana, Illinois, Michigan, Montana and Wyoming has been carried on with Cyclone Drills equipped with Hollow Rod Drilling Tools operated by the Hydraulic Self-Pumping Process. This method of drilling gives extremely accurate results and is by far the most economical method of testing. On a three to six foot vein of coal, it is possible to tell within a one inch limit the thickness as well as the depth to the vein—the same applying to coal "markers" lying above the vein. As the drill cuttings are constantly delivered to the surface, any change in the formation can be easily and instantly detected. It is possible to take samples of each inch of the strata and to prepare a cross section which will show the nature, depth and thickness of every formation penetrated.

Water Wells

No source affords as pure and as constant a water supply as the drilled well. Cyclone Drills are used extensively by mining companies for developing water supply around mines and in company towns and camps. It is often possible to use the same drilling machine for water well drilling as is used for prospecting by purchasing a few additional tools.

Drill Holes Into Mines

The use of drill holes in connection with coal mining operations has come to be a necessity, not only for safety purposes, but for economy as well. They are used as a safeguard to life in times of fire, explosion or floods, for supplying ventilating current, especially into safety chambers. A very important application of drill holes is for installing pumps for dewatering flooded areas and mine workings. In some mines holes have been drilled for the purpose of tapping workings in order to relieve excessive bodies of gas which accumulate. Holes for carrying power and water lines direct to the point where they are used, instead of continuing them for great distances underground, will always result in great savings.

Blast Hole Drilling

In coal stripping operations where the overburden requires blasting before it can be handled with a stripping shovel, big blast holes, 4½ to 6 inches in diameter are drilled with well drills and cable tools, and give by far more economical results than any other method. The holes can be drilled the full depth of the overburden and the whole ledge lifted with one blast. Cyclone Drills pioneered and developed this field.

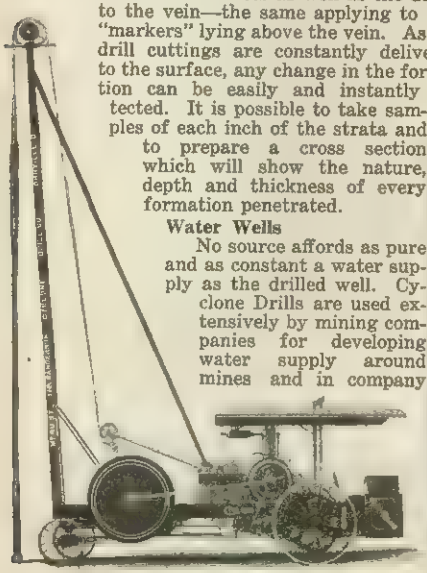
Catalogs

Cyclone Well Drills suitable for prospecting, for water well drilling and for drill holes into mines are covered by our General Catalog A-73 (160 pages).

Cyclone Blast Hole Drills with their application to coal stripping are fully described in our catalog B-44 (100 pages).

In order to quote prices and to make recommendations on a suitable drilling outfit, the following information is required:

(1) Purpose for which drilling is to be done.
(2) Maximum depths of holes
(3) Probable maximum diameter of holes.
(4) Depth bed rock lies beneath the surface.
(5) Nature of underground formations.
(6) Kind of power preferred on drilling machine.
(7) Traction or Non-Traction type of machine preferred



A Cyclone Gasoline Traction Drill Equipped with Cable Tools, Ready for Work

Two Cyclone Gasoline Traction Drills Testing a "Pinched-off" Vein in Anthracite Regions

SULLIVAN MACHINERY COMPANY

152 South Michigan Ave., CHICAGO, ILL., U. S. A.

DOMESTIC SALES OFFICES
Birmingham, Boston, Butte, Claremont, N. H., Cleveland, Dallas, Denver, Duluth, El Paso, Huntington, W. Va., Joplin, Knoxville, Muskogee, Okla. New York, Pittsburgh, St. Louis, Salt Lake, San Francisco, Spokane.

FOREIGN SALES OFFICES
Algiers, Brussels, Calcutta, Christiania, Durban, Johannesburg, Lima, London, Madrid, Mexico City, Paris, San Juan, Santiago, Shanghai, Sydney, N.S.W., Tokyo, Toronto, Turin, Vancouver.

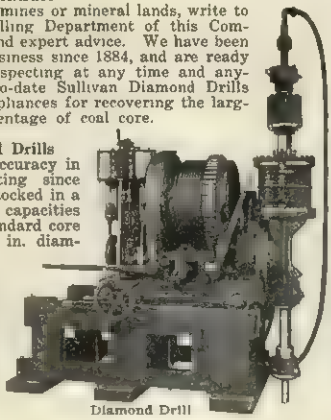
Sullivan Products

Air Compressors; Air Lift Pumps; Diamond Drills; All-Hammer Drill Sharpeners; Drill Steel Furnaces; Ironclad Coal Cutters; Rock and Hammer Drills; Quarrying Machinery; Contractors for Diamond Core Drilling; Cutter Bit Sharpeners; Portable Hoists; Vacuum Pumps.

Prospecting by Contract

When examining mines or mineral lands, write to the Contract Drilling Department of this Company for prices and expert advice. We have been in the drilling business since 1884, and are ready to undertake prospecting at any time and anywhere, with up-to-date Sullivan Diamond Drills and the latest appliances for recovering the largest possible percentage of coal core.

Sullivan Diamond Drills have stood for accuracy in mineral prospecting since 1875. Built and stocked in a dozen styles, for capacities to 6,500 feet. Standard core fittings, ⅜ to 2 in. diameter. Hand, gas-engine, steam or air power. Will drill holes and take cores at any angle. Improved hydraulic or screw (friction) feed, and remodeled hoisting gear.

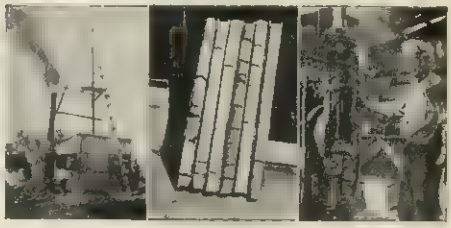


Diamond Drill

Sullivan Reliability

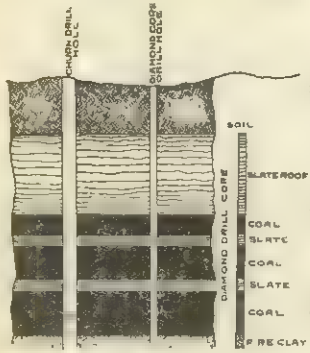
The importance of employing a drilling firm of absolute reliability and of the highest possible standing cannot be over-estimated. The accuracy of the process, the efficiency of the tools used, the skill of the operators, and the responsibility of the contractor behind the drills and men should be considered most carefully. Engineers, mine owners and mineral land purchasers everywhere accept core records, if secured by this company, as conclusive evidence of the thickness, depth, and purity of the veins penetrated.

Oil Prospecting with the Diamond Drill is also undertaken. Ask for Bulletin 80-OD.



A Sullivan Drill in the Field, and Some of the Cores Recovered

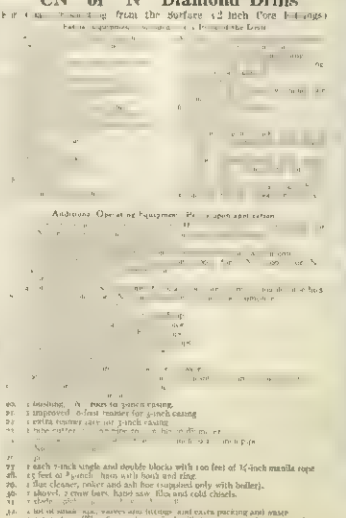
Catalogue 80-D



Presence of Partings. The Diamond Drill Cores show not only the thickness of the coal seam and its depth, but also the presence of impurities and their exact location. No other method does this.

We do from 30 to 40 miles of contract drilling annually. Shall we send one of our field experts to learn your requirements and quote you a price per foot? Booklet 122-MC contains further details.

Specimen List of Equipment for "CN" or "N" Diamond Drills



Sketch to Show Sullivan Improved Double Tube Core Barrel taking Core from a coal seam

SPECIFICATIONS OF SULLIVAN DIAMOND DRILLS

Size of Drill	Depth of Hole Feet	Diameter of Hole Inches	Diameter of Core Inches	Horse-Power Required	Feed: Screw or Hydraulic ("S" or "H")	Weight Drill and Fittings Equipment
Bravo (Hand)	50 to 500	1⅞	⅜	Hand	S	138*
Bravo (Belt)	50 to 600	1⅞	⅜	4 H P	S	148**
E	50 to 500	1⅞	⅜	8	S	1408
Beauty	100 to 1000	1⅞	⅜	8	S	1715
C	500 to 2200	1⅜	1⅛	15	H	3915
CU	500 to 2300	1⅜	1⅛	15	S	4000
B	1500 to 3200	2½	1⅝	15	H	5328
CN	200 to 1200	2⅜	2	15	H	4329
N	1200 to 2500	2⅜	2	20	H	5730
F	3500 to 5500	2⅜	2	25	H	10924
†P-2	2000 to 3000	4⅛	3⅜ 2¾	45	H	11500
†FK	900 to 5 00	4⅛	3⅜ 2¾	30	H	15000**

*Does not include gasoline engine. †For oil drilling. **Drill only

SCHLAICH BAR CAP LOCKS

Schlaich Cap Locks, made from adding to the appearance of the car, make a positive lock for every type of Moto-Meter. Clasp is fine of cap to leave cover always standing ample clearance for filling radiator. Will not strike hood when open. Initial Discount Emblems are available by returning post card included with every cap.

Made in three models A L and F

"A" Cap, outside diameter 2 in., designed for cars with narrow radiators. See specification list for number of proper cap for car.

"B" Cap, outside diameter 2¾ in. for large radiator necks, and is designed to take the De-Luxe Model Moto-Meter without a special adapter. See specification list for number of proper cap for car.

"F" Model is the same as used on the Aristocrat Mode. Never Moto-Meter but is so constructed to permit the use of the Universal and standard Moto-Meter without adapters as well as the Midget which is supplied on the Aristocrat. One "F" cap for Ford and eight additional radiator adapters at a total list of $7.50 will fit any one of 100 models shown under "F" specifications list. See list for proper number

No. A Model—With Insert	Each $6.00
Order by specification list number	
No. B Model—With Insert	Each 6.00
Order by specification list number	
Inserts for A and B	Each 1.25
No. F Model—Without Insert	Each 3.50
Insert for F	Each .50

F Model fits Ford without insert, and with inserts No. F2, F2A, F4, F6, F11, F11A, F18 and F30 fits 100 different models. Read description and see specification list before ordering

SPECIFICATIONS, MODEL A & B

	Insert No.
Abbott Detroit 6-24 (1916)	B3
Abbott Detroit (early models)	B4, F4
Ace	A1
Allen, Model 43 (1920-1923)	A2
Allen, Model 43 (1919 and earlier)	B5, F5
Ambassador	B17
American Beauty 6	A7, B7
American Motors	A25, B25
Anderson, Model 17	A2
Anderson 40	A1
Anderson Jr.	A7
Apperson (1917 and earlier)	B4, F4
Apperson (1918-1923)	B16
Auburn (Beauty 6)	F18
Bay State	B6
Biddle	B27
Brewster	B5, F5
Briscoe	B12
Buick (1917 and early models)	B19
Buick 4 (1918 to 1924)	A1
Buick 6 (1918 to 1923)	A1
Buick 6 (1924)	B32
Cadillac	B2
Case (1913-1918)	B4, F4
Case (1916-1917)	B20
Case (1919 and later)	B9
Chalmers	B9
Chalmers (1921 and earlier)	B4, F4
Chandler	B3, F6
Chevrolet (490 and Superior)	B4, F4
Chevrolet (all models except 490)	A9A
Chevrolet (early models)	A10
Chevrolet (490)	F11
Cleveland	A7
Cole	A6, B6
Cole (1916 and earlier)	A8
Columbia (1921)	B8
Comet	B33
Commonwealth	B31
Crane Simplex	B5, F5
Crawford	F4, F4
Crawford (1921 and earlier)	A7, B7
Crow Elkhart (early models)	L3
Crow Elkhart	B8
Cunningham V. 8	A7, B7
Cunningham	F27
Daniels (1921-1923)	B5, F5
Davis (1920 and earlier)	B4, F4
Davis (1921)	B5, F5
Detroiter	B6, F6
Dixie Flyer	L22
Dorris 4	B8
Dodge	A2
Dorris	B27
Dort	B8
Duesenberg	A18, B18, F18
Dupont	B13
Durant (4 cylinder)	A1
Durant (6 cylinder)	B4
Earl	A12
Elcar	B8
Elgin 6	B6, F7
Elgin Capable	B8
Essex	A3A
Ford	F24
Gardner	B8
Grant	F3
H. C. S.	B4, F4
Handley Knight (1921)	B7
Hanes	B4, F4
Hudson	A3A
Hupmobile (1917 and earlier	B4
Hupmobile (1918 23)	A12
Imperial	B4, F4
Interstate	B4, F4
Jackson (1921)	B8
Jeffrey	B5, F5
Jewett	B5, F5
Jordan (1918-1922)	B4
Jordan (1923-1924)	A3C
King (1918)	B4, F4
King (1919 1923)	A5
Kissel (custom built)	F6
Kissel (early models)	A7, B7
Kissel Silver Special	B28
Kline	B9
Krit (42-50)	B8

	Insert No.
Lafayette	B7
Leach	B7, F6
Lexington (Model 57)	B2
Lexington (Mode TTC)	B8
Lexington (1921)	B4, F4
Liberty (10A 10B 10C)	F7
Liberty	F4, F4
Lincoln	B11
Locomobile	B19
McFarlane 6	B5
Mehrhoon	B9
Marmon (1920-21)	B9
Marmon (1919 and earlier)	B8
Marmon (1922-23)	B8
Maxwell	A18, F18
Mercer	B9
Mitchell	B4, F4
Moline-Knight	B8
Monroe (1921)	B4, F4
Moon (early models)	B8
Moon (6-60)	B4, F4
Nash	A1
National (1917 and earlier)	B4, F4
National (1918-1923)	B16
Noma (1921-1923)	A21
Norwalk	B23
Oakland (1916)	B26
Oakland (1917 22)	A1
Oldsmobile 8 (1922 and earlier)	A1
Oldsmobile 8 (1923 and 1924)	A3A, F3A
Oldsmobile 6 and 8	F3A
Oldsmobile 6 (1924)	F3A
Overland (1922 and later)	A18, A18
Owen Magnetic	F4, F4
Paige	B7
Pan American (1919 and earlier)	B9
Pan American (1920-1921)	B7, F8
Pathfinder	B4, F4
Patterson (1921)	B8
Peerless (1921)	B13
Peerless (1923)	B11
Pierce Arrow	B4
Pierce Arrow (early models)	B5
Pilot	A2
Premier (1918-19-6)	B20
Premier (1917-1923)	B
Premo	B8
R. & C. Knight (1921)	B3
Regal (Model J)	B8
Reo	A10
Revere	B4, F4
Rickenbacher	A18, F18
Roamer	B17
Saxon Duplex	A1
Saxon 6	B4, F4
Scripps Booth (1918 and earlier)	B5, F5
Scripps Booth (1919-1921)	B8
Seneca (1921 and earlier)	A1
Seneca (1922-1923)	A3A
Sheridan	B13
Standard 8 (1920 and earlier)	B4, F4
Standard 8 (1921)	B5, F5
Stanley	B6
Starbrood 6	A7, B7
Stearns Knight (4 cyl. 1917 1918)	B5, F5
Stearns Knight (1919-1921)	B6
Stearns Knight	A4, B4
Stearns 4 (1921	A1, B1
Stearns 8 (early models)	B5, F5
Stephens	B9
Stevens Duryea (6)	B8, F4
Stevens Duryea	L21
Studebaker	A2
Stutz (early and 1917)	B4, F4
Stutz (1918-1923)	B14
Stutz (1924)	B4, F4
Templar (1921 and earlier)	B4, F4
Velie 58 (1921)	B26
Waltham 6	B23
Washington	A7, B7
West Side	B4, F4
White	B4, F4
Wills Sainte Claire	B4, F4
Willys Knight (early, 1922)	B28
Willys-Knight (1921)	B18, A18, F18
Winther	A2
Winton 6	B4

SPECIFICATIONS, MODEL F

	Insert No.
Abbott Detroit (early models)	F4
Allen (Model 43 -919)	F5
Allen (Model 43, 1920 and later)	F5
Anderson (Model 17)	F2
Anderson (1917 and earlier)	F4
Apperson (1917 and earlier)	F4
Austin	F4
Bethlehem Truck	F30
Brewster	F5
Case (1918 to 1915)	F4
Chalmers (1921 and earlier)	F4
Chandler	F3
Chevrolet (F-B Model, 1922)	F2A
Chevrolet (490 and Superior)	F11
Chrysler (1924)	F18
Cleveland	F2
Cole (1918 and earlier	F2
Cole (1917 and later)	F3
Crane Simplex	F5
Crawford (1921)	F4
Dandelin (1921 to 1924)	F3
Davis (1920 and earlier)	F4
Davis (1921 to 1924)	F5
Detroiter	F6
Dodge	F2
Duesenberg	F18
Elgin 6	F7
Empire	F4
Essex (1923 and earlier)	F2A
Essex (1924)	F11
Fisher	F4
Ford	No Insert
Gray	F30
Haynes	F4
H. C. S.	F4
Henderson	F6
Hudson (1923 and earlier)	F3A
Imperial	F4
Interstate	F4
Jeffrey	F5
Jewett	F5
Jordan (1918 to 1921)	F4
King (1918)	F4
King (1919 to 1924)	F3
Leach	F3
Lexington (1921)	F4
Lexington (1924, Concord)	F4
Liberty	F4
Lorraine	F4
Magic	F4
Maxwell	F18
McFarlane 6	F6
Mercer	F4
Mitchell	F4
Model Checker (1924)	F4
Monroe (1921)	F4
Moon (Model 6-40)	F4
National (1917 and earlier)	F4
Oldsmobile (4 cylinder 1919 to 1924)	F3A
Oldsmobile 6 cylinder, 1919 to 1923)	F4
Oldsmobile (6 cylinder, 1924)	F3A
Oldsmobile (8 cylinder, 1923 and early)	F4
Oldsmobile (8 cylinder, 1923 to 1924)	F3A
Overland (1923 and 1924)	F18
Owen Magnetic	F5
Pan	F2
Pan American (1920 and 1921)	F5
Paige	F2
Pathfinder	F4
Peerless (1923 and 1924)	F4
Pierce Arrow	F18
Pierce Arrow (early models)	F5
Pilot	F2
Regal (Model J)	F2
Revere	F4
Rickenbacker	F18
Rollia	F4
Ross	F6
Saxon 6	F4
Savers	F4
Scripps Booth (1919 to 1921)	F4
Scripps Booth (1919 and earlier)	F5
Seneca (1922 to 1924)	F4
Speedwell	F5
Standard 8 (1920 and earlier)	F4
Standard 8 (1921)	F5
Star (1922 and 1923)	F11A
Star (1924)	F11
Stearns Knight (4 cyl, 1917 to 1918)	F5
Stearns Knight	F4
Stephens	F4
Stevens Duryea (early models)	F5
Studebaker (all models)	F2
Stutz (1917 and earlier)	F4
Templar (1921 and earlier)	F4
Westcott	F4
White	F4
Willys Knight (1923 and 1924)	F18
Winther	F2
Winton 6	F4

SPECIAL BAR CAPS

To Fit Practically All Cars

Made of bronze, heavily nickel plated, perfectly machined in every detail to insure a positive fit.

1—Ace
2-3—Allen, 1921.
2—Allen, 1931.
5—Anderson.
5—Apperson
5—Austin.

1—Buick.

2—Cadillac, 1917 to 1921.
5—Chalmers, 1915 to 1921
5—Chandler
4—Chevrolet, 490.
2—Chevrolet, B. G.
2—Chevrolet, Royal Mail
3—Cleveland.
6—Cole
2—Columbia.
1—Crow-Elkhart

5—Davis, 1920 and earlier.
6—Davis, 1921.
6 Peerless.
5—Pierce Arrow.
2—Diamond T Truck.
3—Dodge.
2—Dort.

1—Elcar, 1921
6— Elgin, 1915 to 1921.
2— Essex, 1920 and 1921

7—Ford.

2— Gardner.
3—Grant.

2—Hudson.

2—Jackson
6—Jeffery.
5—Jordan

5—King, 1918-19.
3-7—King, 1920 and 1921.
7—Kissel Kar

2—Lafayette
5—Lexington, prior to 1921.
5—Lexington, 5-pass., 1921.
2—Lexington, 7-pass., 1921.
5—Liberty.
2—Lincoln, 1921.
6—Locomobile.

6—McFarlan
1—Marmon (all 34 models)
4—Maxwell, 1916 and 1917.
3—Maxwell, 1922.
2—Mercer
2—Moline.
5—Monroe.
5 Moon.

1—Nash.

1—Oakland, 1917 to 1921.
6—Oldsmobile, mod. 42 & 43.
5—Oldsmobile, 37-45.

6—Paige, 1915 to 1921.
2— Peerless
5—Pierce Arrow.
5—Premier.

6—Roamer
2—R. & V. Knight

5—Saxon (6).
5—Scripps-Booth, 1921.
5—Standard (8) '20 & earlier
6—Standard (8), 1921
6—Stearns (4) prior to 1921
1—Stearns (4), 1921.
2—Stearns (8).
5—Stephens
6—Stevens-Duryea.
3—Studebaker.
5—Stutz

5—Templar, 1921

8—Velie, 1914 and 1915.

5—Wescott
5—White.
5—Winton, 1918 and 1919.

Packed one in a box.

ORDER BY NUMBER

Special Bar Caps are all drilled for Moto-Meters.

FOR ALL CARS—8½-in	Each $2 00
Chevrolet "490"—6-in.	Each 1 50
Ford Special—6-in.	Each 1 25

RADIATOR CAPS

Six inches from tip to tip. Made of bronze, nickel plated Packed in counter display, ten of any one type to a box.

Nos. 206-R and 211-R

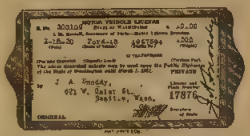
No. 206-R—Ford and Gray cars	Each $0.75
No. 211-R—Star and Chevrolet cars	Each .75

Nos. 208-D and 213-D

No. 208-D—Ford and Gray cars	Each $0.85
No. 213-D—Star and Chevrolet cars	Each .85

"LEGAL" LICENSE CONTAINER

FOR AUTOMOBILE LICENSES



The law requires installation of License Containers on all automobiles. The Director of Efficiency in Charge of State Police says: "License bearing signature of owner must be carried in container having transparent cover on steering post or instrument board"

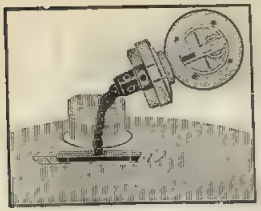
No. 1—Brass. Has celluloid cover and metal back plate. Finished either nickel or black enameled. Complete with screws for attaching	Each $0.50
No. 2—Aluminum. Otherwise same as No. 1	Each .40

AUTO CLOCK

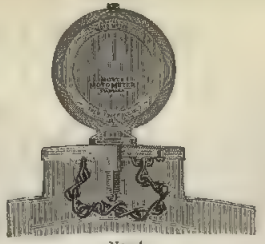
30-hour; vibration proof. Triple nickel plated. Just the clock where one does not want to cut the dash. Has both wood screws and long machine screws with nuts packed with each clock

Motoria—Length over all, 3 in. Each $3.50

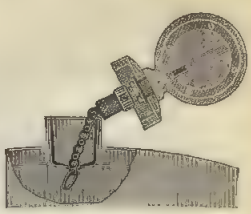
SCHLAICH MOTO-METER LOCKS



Nos. 1, 2 and 3.



No. 4.



Nos. 5 and 8.

More than 3,000,000 Boyce Moto-Meters are in use and every one is a live prospect for a Schlaich Lock. You pave the way for the sale of a Schlaich Lock every time you sell a Moto-Meter. The Schlaich Lock allows you to unscrew the cap to fill the radiator but it absolutely prevents the theft and also prevents you from laying the instrument where it can drop to the ground. No drilling or mechanical work of any kind is required yet when in place it cannot be taken off except by removing the set screws which can be done only by the owner.

Adjustable to a radiator truck of any depth.

Nos. 1, 2 and 3

This Series consist of a nickel plated nozzle with a locking set screw channel bar and ring, all of solid brass and a nickel plated brass chain connecting the nozzle and channel bar. Adaptable to 85% of all cars manufactured.

Nos.	1	2	3
Size	¾	⅝	7/16
For Boyce Moto-Meters	De Luxe, Truck and Tractor	Standard, Universal	Junior, Ford, Midget, 7/16 in Standard
Each	$2.00	1.80	1.80

No. 4

The No 4 consists of a nickel plated brass plate, (which takes the place of brass plate in radiator cap), hardened steel chain, pin and nickel plated brass locking nut. For use in cars having bar in radiator neck into which the Boyce Moto-Meter is screwed.

No. 4—Moto-Meter Locks. Size, Special, For all Overland Types ..... Each, $1.50

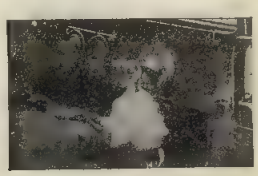
Nos. 5 and 8

This style consists of a nickel plated nozzle with a locking set screw, spring V shaped bar and ring, all of solid brass, and a nickel plated brass chain connecting nozzle and bar.

Nos.	5	8
Size	Special	Special
For	Nash and 1921 Oakland	Large 6 Velie
Each	$1.80	1.80

A. C. SPEEDOMETERS

SPEEDOMETER HOLE CUTTER



A. C. Speedometers

A high grade magnetic instrument, fully jewelled, registering 0 to 70 miles per hour, 100,000 miles total register and 100 mile trip, registering tenths and resetable. Black face with white figures. Rim of solid brass nickeled.

The Drive for the AC Speedometer is taken from the left front wheel, and is installed on the wheel flange. No holes to drill, no swivel to give trouble. A small compact drive nearly hidden from view, the gear being held by 3 wheel flange bolts.

A C Speedometers—Complete with Driving Shaft, Gears, Attachments and Complete Instructions.... Each, $15.00

Speedometer Hole Cutters

For installing Speedometers. The AC Hole Cutter answers the demand for a tool to install Speedometers which combines easy efficient action with low cost. A few turns quickly and neatly cuts the hole.

A C Hole Cutters—Complete with Blade..... Each, $1.50
Extra Blades ..... Each, .10

GUITARS AND GUITAR CASES

AMERICAN MAKE GUITARS

Note these advantages in purchasing Guitars of our make. You secure for your trade:

1. The only Guitars having a mathematically correct fingerboard.
2. Guitars made from thoroughly seasoned material by skilled workmen, working in daylight.
3. Guitars whose patents head have no "lost motion."
4. Guitars that possess a clear, far-carrying musical tone.

Guitars of the most graceful model ever designed.

STANDARD SIZE

No. 91249 Standard [illegible] birch [illegible] hand, near [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] each ... $11 50

No. 9490 [illegible] hand-[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [

Mandolins and Mandolin Cases and Bags

THE SALIENT FEATURES OF OUR MANDOLINS ARE:

1. Thoroughly seasoned material, insuring durability
2. Highest class of workmanship throughout
3. Every finger-board mathematically correct
4. Superior tone quality arising from acoustically correct model
5. Smooth working patent heads with no "lost motion" [illegible] effective

AMERICAN MAKE MANDOLINS

No. 9501 18 ribs, dark mahogany finish, with black inlaying between, broad fancy colored wood inlaying around sound hole and edge, celluloid bound, high varnish finish, mahogany finish neck, rosewood finger board and high varnish finish, spruce top, ebonized finger-board, pearl position dots, black bridge, good quality patent heads, nickel plated tail piece, each $18.50

No. 9503 20 ribs of rosewood and maple, with red inlaying between, extended rosewood apron, hand polished, broad fancy colored curled inlaying around sound hole edge, celluloid bound, rosewood finger-board, pearl position dots, our own make nickel plated patent head, nickel shell pattern tail piece, each 24.00

No. 9601 20 ribs of rosewood, with white inlaying between, hand polished, broad fancy colored curled inlaying and celluloid bound, inlaying around sound hole edge, celluloid bound, fancy colored curled inlaying and celluloid bound, inlaying around edge of top, extended rosewood apron, ebonized finger-board, pearl position dots, our own make nickel plated patent head, nickel plated wrist rest and tail piece each 27.00

No. 9603 24 ribs of rosewood, with white inlay between, hand polished, broad fancy colored curled inlaying around sound hole and edge, celluloid bound, inlaying around edge of top, extended rosewood apron, celluloid bound, ebonized finger-board, pearl position dots, our own make rosewood veneered head piece, nickel plated combined wrist rest and tail piece, each 34.75

No. 9604 42 ribs of rosewood, with white inlay between, hand polished, extra broad fancy colored curled inlaying around sound hole and edge, celluloid bound edge and apron, tortoise celluloid guard plate, with fancy inlaid [illegible] mahogany neck, fancy colored head piece veneered, ebony finger-board celluloid bound, beauty pearl position dots, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece, each ..... [illegible]

No 9604

12-STRING MANDOLINS

No. 91

No. 91502 12 strings, 18 ribs of solid mahogany, with black inlaying between, extended rosewood apron, high varnish finish, broad fancy colored wood inlaying around sound-hole and edge, celluloid bound, spruce top, mahogany finish neck, rosewood finger-board and tortoise celluloid guard plate, pearl position dots, our own make nickel plated patent head, nickel plated shell pattern tail piece, each 25.10

No. 91603 12 strings, 18 ribs of rosewood, with white inlay between, hand polished, broad fancy colored curled inlaying around sound hole and edge, celluloid bound edge and apron, tortoise celluloid guard plate handsomely white inlaid, mahogany neck, rosewood veneered head piece, ebony finger-board pearl position marks, our own make nickel plated patent head, nickel plated combined wrist rest and tail piece, each 39.25

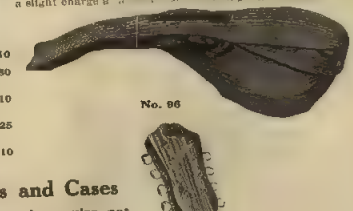
MANDOLIN CASES

No. 91 Canvas, flannel lined, with patent fastenings, superior [illegible] quality, each 3.80

No. 94 Black, leather grain sealed black leather, [illegible] metal [illegible] 9.40

No. 99 [illegible] lined and bound [illegible] red and orange [illegible] each 21 45

Note.—When a mandolin case is purchased separately, a slight charge a[illegible]



No. 96

MANDOLIN BAGS

No. 96 Green felt, with patent buttons, unlined, box shape, each $2.10

No. 915 Green felt, fleece lined, with patent buttons, box shape, each 2.80

No. 914 Green billiard cloth, unlined, box shape with patent glove buttons, superior quality, each 2.10

No. 917 Green billiard cloth, fleece lined, box shape, with patent glove buttons superior quality, each 3.25

No. 97 Green felt, box shape, with patent buttons, unlined, for 12-string mandolin each 2.10

New Flat Back Mandolins and Cases

These instruments have become immensely popular, not only because they are what may be termed popular priced, but also because of their beautiful proportions, tone and finish. The cuts do not do them justice.

No. 9160 Hardwood body mahogany finish neck, white celluloid around sound hole, medium mahogany finish, ebonized finger-board, pearl position dots, black bridge, good quality patent heads, shell pattern covered tail-piece, each ..... $ 9.70

No. 9200 Flat back, curly birch, shaded rosewood finish, fine hand polished celluloid edged sound-hole and top edge, ebony bridge, rosewood finger-board, Liberty silver frets, 4 pearl position dots, good quality patent head, nickel plated tailpiece, each 13.20

No. 9325 Neapolitan model, curly birch, beautiful shaded rosewood slightly shaded, sound-hole edged with white celluloid, extension rosewood finger-board, ebony bridge, 3 pearl dots, good quality patent heads, nickel plated tailpiece, each 17.10

No. 9400 Neapolitan model curly birch, beautiful shaded rosewood finish, extension finger-board, 4 pearl position dots, Liberty silver frets, top and back as well as finger board bound with white celluloid, sound-hole edged with celluloid, ebony bridge with bone nut, large celluloid extension guard plate, nickel plated patent head and tail-piece, each 20.30

No. 9723 Conservatory brand, mahogany top, back and sides, top and back inlaid with black and white purfling around edges and bound with black celluloid, tortoise celluloid guard plate, sound hole inlaid and bound same [illegible] ebony finger-board with pearl position dots, [illegible] nickel plated patent head and wrist rest and tail piece, [illegible] 20 Liberty silver frets, [illegible] nickel plated tailpiece, nickel plated covered patent [illegible] pieces, the finest [illegible] white buttons, nickel plated covered tailpiece, ebony bridge with bone saddle, high grade in every detail, each 30.70

No. 9823 Conservatory brand, same model as No. 9723 rosewood back and sides detailed [illegible] as No. 9723, except fingerboard [illegible] is bound with white celluloid and has a natural color [illegible] 35.15

No. 9723

Flat Back Mandolin Cases

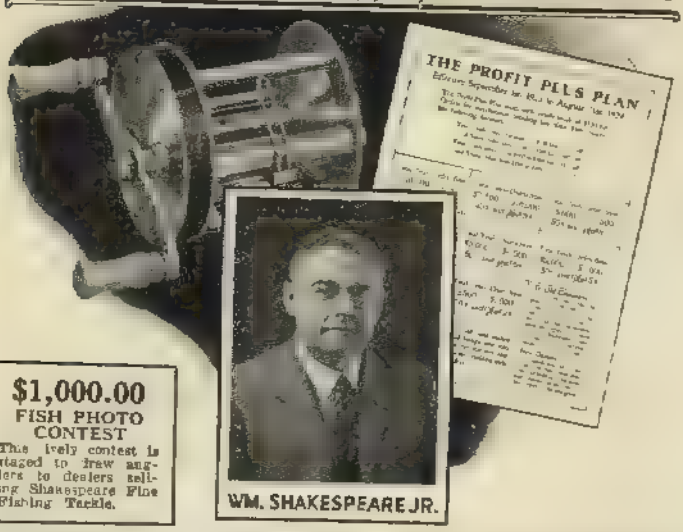
No. 9203 Canvas, reinforced strawboard, end opening patent fasteners, leather handle, superior quality, to fit Nos. 9200, 9723, 9823, each $3.50

No. 9204 Same as No. 9203, for Mandolins Nos. 9325, 9400, each 3.60

Note.—Where a mandolin case is purchased separately, a slight charge at actual cost for boxing will be made

Neapolitan Model No. 9400

Better Tackle at Lower Prices to the Angler—
and a greater margin of profit to our dealers


THE PROFIT PLUS PLAN
$1,000.00
FISH PHOTO CONTEST
This lively contest is staged to draw anglers to dealers selling Shakespeare Fine Fishing Tackle.
WM. SHAKESPEARE JR.

"All My Life I Have Worked for This"

and now I am realizing my ambition.

Every morning when I open the mail letters from dealers in every state in the union contain expressions like this one from Ohio, "We like Shakespeare Tackle because it is Fine Tackle; at so low a cost that it not only offers the dealer a very satisfactory margin of profit, but at the same time gives his customer friends the utmost in value, service and satisfaction."

In a factory where there is no piece work, where every workman is a partner and shareholder, I have been able to build the finest, most perfect fishing tackle—Price it to the angler lower than ever before—market it through reliable dealers—giving them a greater margin of profit. All my life I have worked for this.

Wm. Shakespeare Jr.

SHAKESPEARE COMPANY, KALAMAZOO, MICHIGAN

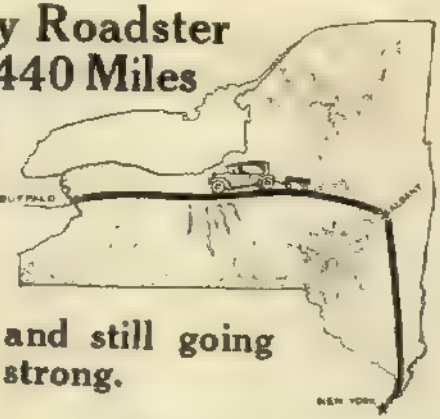
Shakespeare

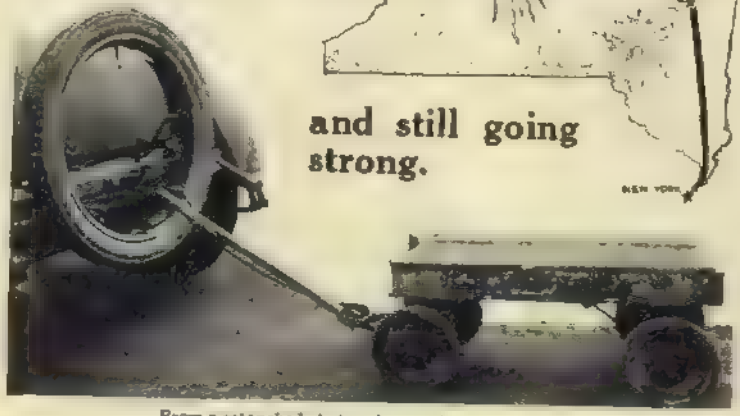
FINE FISHING TACKLE

Say you saw it in GOOD HARDWARE

This Chummy Roadster Was Trailed 440 Miles

—the distance from New York to Buffalo —





and still going strong.

From a retouched photo taken at the end of the run

Set Up	One Chummy Roadster Wagon taken at random from stock assembled in usual manner without any reinforcement loaded with a steel die bolster weighing 85 lbs and trailed behind an automobile over State and county roads
Mileage and Time	Total distance covered 440 7 miles Total running time 14¼ hours. Average running speed 30 miles per hour
Replacements	One rubber tire at 261 miles Wagon upset while speeding at 45 miles Tire rolled off and lost down an embankment Two nuts loosened thru vibration and lost
Inspection at end of test	Body badly scarred from upset Wheels and gear apparently unaffected—good for another run of equal duration Rubber tires worn from abuse, but secure

I, Henry M. Shaw do hereby certify that I personally observed the above test from start to finish, tabulated my findings as above set forth and that said facts and figures are exact and true to the best of my knowledge and belief.

Dated July 28th 1924 Signed Henry M. Shaw

County of Madison,
State of New York
Subscribed and sworn to this 28th day of July 1924, before me a Notary Republic in and for said County and State.

H. J. Becker
Notary Public

HENRY J. BECKER
NOTARY PUBLIC
MADISON CO. N.Y.

Write for our interesting proposition to dealers, and copies of Sherwood Chummy Roadster literature.

Sherwood Bros. Mfg. Co., Inc., Canastota, N. Y.

Be Prepared for the **SPRING** Coaster Demand

There's No Getting Away from It—

—there are two types—**YOUNGSTERS** and youngsters—that enter your store with their parents. They are all after a juvenile speed vehicle with four wheels.

The one class knows what they want and say: "Let's see one of your best Sherwoods."

The other class asks: "What are the prices of your Sherwoods?"

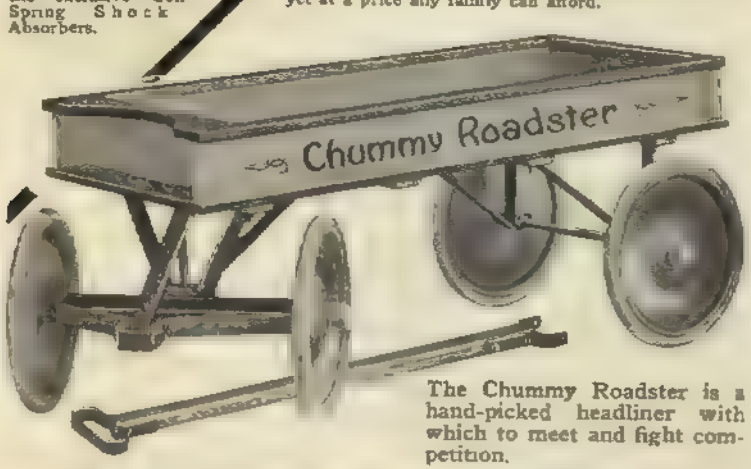
SHERWOODS

They know the Sherwood Spring Coaster to a boy is the same as a Packard or Rolls - Royce is to a grown-up. They know the Auto Single Disc Wheels with Balloon effect Tires, Roller Bearings, nickeled Hub Caps and the exclusive Coil Spring Shock Absorbers.

This class has a limited amount to spend and will appreciate the advantages of a

Chummy Roadster

It's up to the Sherwood standard of quality—yet at a price any family can afford.



The Chummy Roadster is a hand-picked headliner with which to meet and fight competition.

Write for our big illustrated folder of detailed specifications

Sherwood Bros. Mfg. Co., Inc., Canastota, N.Y.

There's a **SHERWOOD** For every season

COASTERS - ROLLER SKATES — SLEDS — SKIS

Say you saw it in GOOD HARDWARE

A Paul Schofield Production

East of Broadway

(Adapted from the Saturday Evening Post story, "The Tropic of Capricorn" by Richard Connell)

with

Owen Moore
Mary Carr
Ralph Lewis
Marguerite De La Motte

"Mullaney, when an officer like you says the Tropic of Capricorn is in the Bronx, it is!"

As a probationer on the police force, he had been refused his shield because he had "flunked" on just one question in his written examination.

He begged for permission to go on patrol just one more night in his proud uniform of blue.

What happened to make the Commissioner of Police reverse himself, and with his own hands pin on the shining medal?

IF THIS PICTURE DOESN'T GRIP YOU, STIR YOU, THRILL YOU, THEN YOU ARE BLASE INDEED

A great opportunity for tie-ups with local police forces. It's a real honest-to-goodness police story from start to finish.

Directed by Wm. K. Howard

ASSOCIATED EXHIBITORS

Arthur S. Kane, President

Physical Distributor
Pathe Exchange, Inc.

Encore Pictures

Foreign Representative
Sidney Garrett

A William Christy Cabanne Production

The Sixth Commandment

A drama of modern love and hate

Can a girl be truly in love and yet lose her faith in her lover for even a few short hours?

Novelists write of a love that never falters and lasts until death itself; a love that always trusts and believes.

Here was a girl in love, loved by the man she loved. Yet for a few short hours she believed him a murderer, just because she had heard him say just three short words. Could she have truly loved him? And believing him guilty, was her duty to her lover or the law?

A powerful story with a powerful cast, —William Faversham, Charlotte Walker, Edmund Breese, John Bohn, Charles Emmet Mack and others.

ASSOCIATED EXHIBITORS

Arthur S. Kane, President

Physical Distributors
Pathe Exchange, Inc.

Encore Pictures

Foreign Representative
Sidney Garrett

SHURE WINNER — THE PRICE LIST

Wallace Bros. Reliable XC. Plated Tableware

All Strictly "Firsts"—Finely Buffed. Attractively Packed

We do not break Boxes Sold in original Boxes Only

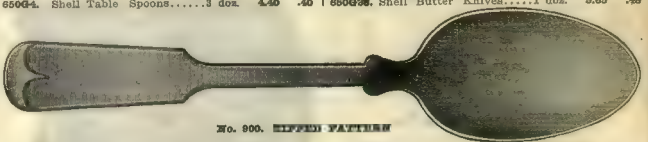
WB W

For low price tinned goods these are reliable in quantity and uniform in finish.

Registered Trade Mark

No. 650. SHELL PATTERN

No.	Article	In Box	Gross	Doz.
650G1.	Shell Tea Spoons	3 doz.	2.20	.20
650G3.	Shell Dessert Spoons	2 doz.	4.30	.38
650G4.	Shell Table Spoons	3 doz.	4.40	.40
650G14.	Shell Flat Forks	2 doz.	4.85	.42
650G32.	Shell Sugar Shells	1 doz.	3.85	.34
650G36.	Shell Butter Knives	1 doz.	5.65	.48



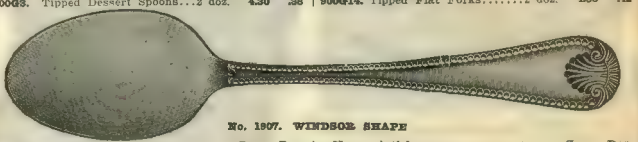
No. 900. TIPPED PATTERN

We do not break Boxes

No.	Article	In Box	Gross	Doz.
900G1.	Tipped Tea Spoons	3 doz.	2.20	.20
900G3.	Tipped Dessert Spoons	2 doz.	4.30	.38

Goods sold in original Boxes Only

No.	Article	In Box	Gross	Doz.
900G4.	Tipped Table Spoons	2 doz.	4.40	.40
900G14.	Tipped Flat Forks	2 doz.	4.85	.42



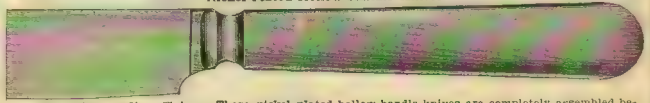
No. 1907. WINDSOR SHAPE

No.	Article	Gross	Doz.
1907G1.	Tea Spoons	2.40	.22
1907G3.	Dessert Spoons	4.70	.42
1907G4.	Table Spoons	4.85	.44
1907G14.	Medium Forks	5.30	.46
1907G32.	Sugar Shells	3.95	.34
1907G33.	Butter Knives	5.75	.50
1907G24.	Medium Knives (2-piece)	9.25	.80

Plain XC. Plated Crucible Steel Knives

No. 140G24. Tin Plated Medium Table Knives. For utility and good common wear are as good as any high grade made. We certainly have the nicest finished goods offered anywhere. Full size, made of two-piece tempered steel, will give excellent satisfaction to seller and user. Knives. Per gross ..... 5.40 Per dozen ..... .74

Nickel Plated Hollow Handle Knives



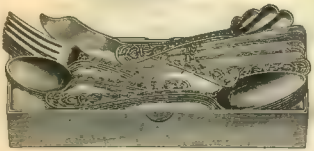
No. 10C20. Medium Knives. These nickel plated hollow handle knives are completely assembled before being plated. The water-tight seams make them perfectly sanitary. Hand buffed and finished, made of best material, assuring satisfactory service Each piece tissue wrapped One dozen in box Per dozen ..... .75

New "Daisy" Pattern Tableware

DAISY FLATWARE is a high grade white metal ware, new improved, it looks like silver, good heavy weight, heavily Malacca plated and polished same as a fine silverware. The pattern is a "daisy" design. Embossed on both sides of handle in bright finish on satin silver finish background with burnished edges, rich and pleasing in effect.

No.	Article	In Box	Gross	Doz.
165G1.	Teaspoon	3 doz.	2.75	.25
165G3.	Dessert Spoon	2 doz.	5.40	.48
165G4.	Tablespoon	2 doz.	5.50	.50
165G14.	Dinner Forks	2 doz.	5.95	.52
165G33.	Butter Knife	1 doz.	5.85	.50
165G32.	Sugar Shell	1 doz.	4.50	.39
165G24.	Medium Knives (2-piece)	1 doz.	9.50	.82

26-Piece in Bulk Box



26-Piece Set in Compact Bulk Box. Daisy Pattern. Set consists of 6 Knives, 6 Forks, 6 Tablespoons, 6 Teaspoons, 1 Butter Knife, 1 Sugar Shell. Each set packed in strong, neat, telescope paper box, 9½ inches long, 2¾ inches wide, 2 inches high.

No. 165G77. Per set..... **1.05**

26-Piece Set, Daisy pattern. Contains, 6 teaspoons, 6 tablespoons, 6 medium forks, 6 medium knives, 1 butter knife, 1 sugar shell.

No.		Per set
165G77.	In bulk, (no display case).....	1.05
165G61.	In flat leatherette case.....	1.60
165G64.	In grey moire chest with drawer.....	1.70

12-Piece Knife and Fork Set

12-Piece Knife and Fork Set. Daisy Pattern, consisting of 6 Fancy Dinner Forks and 6 (2-piece) Dinner Knives. Highly polished. Come in a neat, compact, bulk box.

No. 165G70. Per set..... **.65**

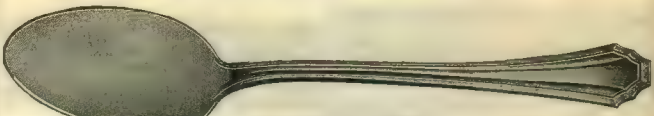
12-PIECE KNIFE AND FORK SET

12-Piece Set. 6 flat handle forks and 6 (2 piece) medium knives. Nicely polished goods, heavily Nickel plated, right as silver, on good steel blanks. Give very serviceable wear. In a neat box, making a very presentable and showy set for a low price.

No. 159G70. Per set..... **.55**

Wm. A. Rogers. "W.R." Brand

Heavily Silver Plated on Nickel Silver Base



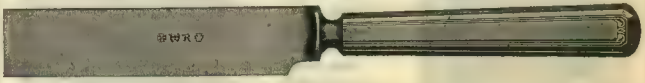
BELVEDERE PATTERN
Bright Finish

AMHERST PATTERN
French Gray Finish

BELVEDERE PATTERN			AMHERST PATTERN		
No. 320G1.	Tea Spoons. Per dozen	1.45	No. 322G1.	Tea Spoons Per dozen	1.45
No. 320G2.	Dessert Spoons Per dozen	2.62	No. 322G3.	Dessert Spoons Per dozen	2.62
No. 320G4.	Table Spoons Per dozen	2.90	No. 322G4.	Table Spoons Per dozen	2.90
No. 320G14.	Medium Forks. Per dozen	2.90	No. 322G14.	Medium Forks. Per dozen	2.90
No. 320G25.	Medium Knives Per dozen	3.55	No. 322G35.	Medium Knives. Per dozen	3.55
No. 320G32.	Sugar Shells. Each	.22	No. 322G32.	Sugar Shells Each	.22
No. 320G33.	Butter Knives. Each	.24	No. 322G33.	Butter Knives. Each	.24

BELVEDERE, AMHERST AND PLAIN PATTERNED KNIVES AND FORKS

No. 320G25. Belvedere Pattern. Medium Knives, solid handles. Per dozen 3.55
No. 320G14. Belvedere Pattern. Medium Forks, flat handles. Per dozen 2.90

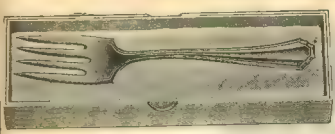


No. 322G25. Amherst Pattern. Medium Knives, solid handles. Per dozen 3.55
No. 322G14. Amherst Pattern. Medium Forks, flat handles. Per dozen 2.90

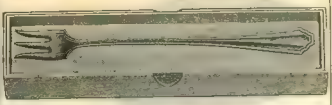
No. 326G23. Plain Pattern. Medium Knives, solid handles, heavily silver plated. Per dozen 3.35
No. 326G13. Plain Pattern. Medium Forks, solid handles, heavily silver plated. Per dozen 3.35

Wm. A. Rogers, "W.R." Brand

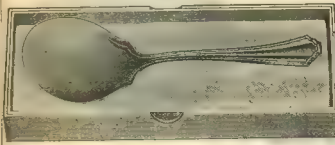
Heavily Silver Plated on Nickel Silver Base



No. 320G44. Cold Meat Fork, Belvedere Pattern.
Each ..... .53
No. 322G44. Cold Meat Fork, Amherst Pattern.
Each ..... .53



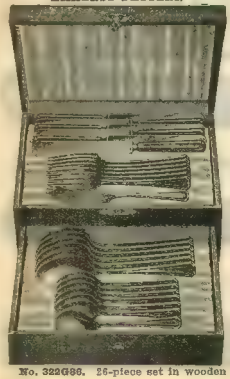
No. 320G46. Pickle Fork, Belvedere Pattern.
Each ..... .35
No. 322G46. Pickle Fork, Amherst Pattern.
Each ..... .35



No. 320G37. Berry Spoon, Belvedere Pattern.
Each ..... .72
No. 322G37. Berry Spoon, Amherst Pattern.
Each ..... .72

No. 320G57. Gravy Ladle, Belvedere Pattern.
Each ..... .61
No. 322G57. Gravy Ladle, Amherst Pattern.
Each ..... .61

AMHERST PATTERN



No. 322G86. 26-piece set in wooden case
Per set 6.91
No. 322G77. 26-piece set (bulk) without case.
Per set 5.86

26-Piece Set consists of:

6 Tea Spoons
6 Table Spoons
6 Medium Forks
6 Medium Knives
1 Sugar Shell
1 Butter Knife

BELVEDERE PATTERN

No. 320G86. 26-piece set in wooden case
Per set 6.91
No. 320G77. 26-piece set (bulk) without case.
Per set 5.86
No. 320G84. 26-piece set in grey moire chest, with drawer.
Per set 6.51

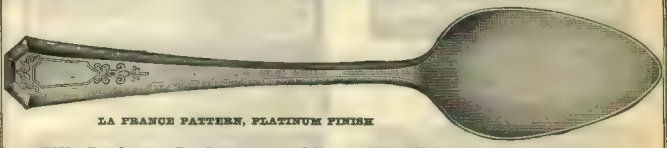
Wm. Rogers & Son Silverplate

This Silverware is Plated 25% heavier than any Standard Plate on the finest quality of Nickel Silver Base.

Guaranteed without Time Limit for Perfect Satisfaction.

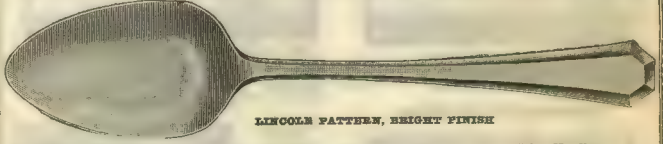
MAYFAIR PATTERN, GRAY FINISH

No. 418G1.	Tea Spoons. Per dozen..... **1.86**	**No. 418G14.**	Medium Forks, flat handle. Dozen **3.72**
No. 418G3.	Dessert Spoons. Per dozen..... **3.53**	**No. 418G25.**	Medium Knives, solid handle. Doz. **4.45**
No. 418G4.	Table Spoons. Per dozen..... **3.72**	**No. 418G32.**	Sugar Shell. Each..... **.29**
No. 418G5.	Soup Spoons. Per dozen..... **3.72**	**No. 418G33.**	Butter Knives. Each..... **.31**



LA FRANCE PATTERN, PLATINUM FINISH

No. 416G1.	Tea Spoons. Per dozen..... **1.86**	**No. 416G25.**	Medium Knives, Solid Handles. Per dozen **4.45**
No. 416G3.	Dessert Spoons. Per dozen..... **3.53**	**No. 416G32.**	Sugar Shells Each..... **.29**
No. 416G4.	Table Spoons. Per dozen..... **3.72**	**No. 416G33.**	Butter Knives. Each..... **.31**
No. 416G5.	Soup Spoons. Per dozen..... **3.72**		
No. 416G14.	Medium Forks, Flat Handles. Per dozen **3.72**		



LINCOLN PATTERN, BRIGHT FINISH

No. 410G1.	Tea Spoons. Per dozen..... **1.86**	**No. 410G25.**	Medium Knives, Solid Handles. Per dozen **4.45**
No. 410G3.	Dessert Spoons. Per dozen..... **3.53**	**No. 410G32.**	Sugar Shells. Each..... **.29**
No. 410G4.	Table Spoons. Per dozen..... **3.72**	**No. 410G33.**	Butter Knives. Each..... **.31**
No. 410G5.	Soup Spoons. Per dozen..... **3.72**		
No. 410G14.	Medium Forks, Flat Handles. Per dozen **3.72**		

2-PIECE STEAK CARVERS

2-Piece Steak or Bird Carvers. Solid Handles with Stainless Steel Knife. Each set in Fancy Lined Box.

No. 410G105. Lincoln Pattern. Per set..... **2.50**			
No. 416G105. La France Pattern. Per set..... **2.50**			
No. 418G105. Mayfair Pattern. Per set..... **2.50**			

BUTTER KNIFE AND SUGAR SHELL SET

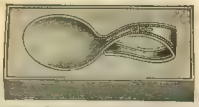
Butter Knife and Sugar Shell Set In Fancy Lined Case.

No. 410G65. Lincoln Pattern. Per set..... **.75**			
No. 416G65. La France Pattern. Per set..... **.75**			
No. 418G65. Mayfair Pattern. Per set..... **.75**			

SHURE THE PRICE LIST WINNER

William Rogers and His Son

Baby Spoons



Baby Spoons. Each in Lined Box.

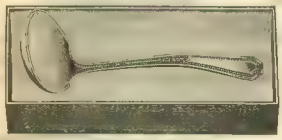
No. 410G36.	Lincoln Pattern Each	.33
No. 416G36.	La France Pattern. Each	.33
No. 418G36.	Mayfair Pattern. Each	.33

Pickle Fork

Long Pickle Fork. Each in Lined Box.

No. 410G46.	Lincoln Pattern. Each	.35
No. 416G46.	La France Pattern. Each	.35
No. 418G46.	Mayfair Pattern. Each	.35

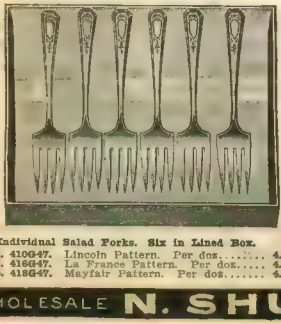
Gravy Ladle



Gravy Ladles. Each in Lined Box.

No. 410G57.	Lincoln Pattern. Each	.77
No. 416G57.	La France Pattern. Each	.77
No. 418G57.	Mayfair Pattern. Each	.77

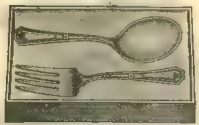
Individual Salad Forks



Individual Salad Forks. Six in Lined Box.

No. 410G47.	Lincoln Pattern. Per doz.	4.50
No. 416G47.	La France Pattern. Per doz.	4.50
No. 418G47.	Mayfair Pattern. Per doz.	4.50

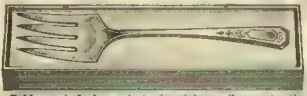
2-PIECE BABY SET



2-Piece short handle child's fork and spoon set. Each set in fancy lined box. Can be had in the following patterns:

No. 410G67.	Lincoln Pattern. Per set	.65
No. 416G67.	La France Pattern. Per set	.65
No. 418G67.	Mayfair Pattern. Per set	.65

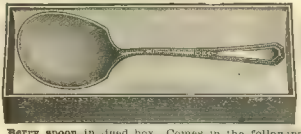
COLD MEAT FORK



Cold meat fork, each in lined box. Comes in the following patterns:

No. 410G44.	Lincoln Pattern Each	.65
No. 416G44.	La France Pattern Each	.65
No. 418G44.	Mayfair Pattern. Each	.65

BERRY SPOON



Berry spoon in lined box Comes in the following patterns:

No. 410G37.	Lincoln Pattern. Each	1.00
No. 416G37.	La France Pattern. Each	1.00
No. 418G37.	Mayfair Pattern. Each	1.00

3-PIECE CHILD SET

New Style 3-Piece Carded Child Set

Consists of one Knife, one Fork and one Spoon. The three pieces are fastened to a beautiful card with pictures of playing children. This set is very attractive for children. Comes in the following patterns.

Per Set

No. 410G66. Lincoln Pattern... 1.10

No. 416G66. La France Pattern 1.10

No. 418G66. Mayfair Pattern... 1.10

WHOLESALE N. SHURE CO. CHICAGO.

Silver Plated Liquor Flasks

Pocket Flask, silver plated open work design, glass lined screw top, flask half pint size.

No. 88J59. Each..... 1.75

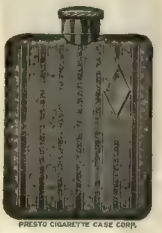
Flask, Dutch design, silver design, oxidized finish, silver plated flask, screw top, holds 4 ounces.

No. 88J56.

Per doz.... 18.00 / Each.... 1.65

Pocket Flask, white metal engine turned design, guaranteed not to corrode or spoil contents, screw top.

No. 88J60. Each..... 1.75



Pocket Flask, white metal engine turned design, guaranteed not to corrode or spoil contents, screw top.

No. 88J61. Each..... 1.75

Flasks, heavy silver plated, engine turned effect, screw top, guaranteed not to corrode.

Flask, vest pocket size.

No. 88J35. Each..... 2.15

Flask, one-half pint size.

No. 88J36. Each..... 2.75

Flask, white metal lined with sterling silver, hammered design with bright shell center, holds ½ pint.

No. 88J57. Each..... 3.45

Sterling Silver Liquor Flask

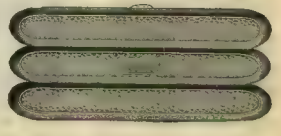
Flask, Sterling silver, hammered or engine turned design, screw top holds 5 ounces.

No. 88J51. Each... 9.00

Flask, same as above, holds 6 oz.

No. 88J52. Each.. 14.50

Aluminum Cigar Case



Aluminum Cigar Case, embossed design made to hold three cigars.

No. 88J55. Per dozen..... 4.50

JOHN ALDEN

PRICE LIST

BRIGHT FINISH	Per Dozen
Tea Spoons, Small	$23 40
Tea Spoons, Regular	27 25
Tea Spoons, Medium	31 25
Tea Spoons, Heavy	39 00
Dessert Spoons, Regular	54 40
Dessert Spoons, Medium	59 40
Table Spoons, Regular	70 00
Table Spoons, Medium	78 25
Soup Spoons, Round Bowls	62 50
Dessert Forks, Regular	54 40
Dessert Forks, Medium	59 40
Dinner Forks, Regular	70 00
Dinner Forks, Medium	78 25
Bouillon Spoons	38 00
Butter Spreaders, Large	41 60
Coffee Spoons, Large	19 00
Ice Cream Forks	41 60
Ice Cream Spoons	36 05
Iced Tea Spoons,	41 60
Oyster Forks, Large	33 35
Pastry Forks	63 50
Ramekin Forks	38 00
Individual Salad Forks, Large	63 50

CUTLERY	Per Dozen
Dessert Knives, Stainless Blades	63 50
Breakfast Knives, Stainless Blades	67 00
Dinner Knives, Stainless Blades	70 00

CARVING SETS	Per Set
Steak Set, Two Piece, with Guard	13 50
Game Set, Two Piece, with Guard	30.00
Meat Set, Three Piece, with Guard	40 00

FANCY SINGLE PIECES	Each
Berry Spoon, Large	13 35
Cold Meat Fork, Large	11 60
Gravy Ladle	13.35
Cream Ladle, Small	4 15
Jelly Server	4 00
Olive Spoon, Short	3 80
Olive Fork, Short	2 75
H. H. Pie Server,	8.25
Sugar Spoon, Large	4 60
Sugar Tongs, Large	7.10
Butter Knife	7 00
Tomato Server, Large	13 35

JOHN ALDEN

The romance of John Alden and Priscilla is deeply rooted in the literature and in the hearts of Americans. It is a simple story of simple folk, but it embraces love concealed, repressed, challenged, avowed, and consummated, in the days of privation and high purpose that laid the foundation of our government at Plymouth.

There is something in the serenity of the contours of the John Alden pattern that renders it ideal as a Solid Silver table service and one of the most popular patterns in the Watson Company's "Heritage" Solid Silver Group. The John Alden is available either in the plain polish or the soft gray platinum finish.

In design and workmanship it is well worthy of its distinguished name and it strikingly reflects the spirit of the Colonial, our national style.

This pattern is made only in

"Heritage" Solid Silver
STERLING 925/1000 FINE

The LADY WELLESLEY

PRICE LIST

	Per Dozen
STAPLE DOZENS	
Tea Spoons, Regular	$27 25
Tea Spoons, Medium	31 25
Tea Spoons, Heavy	39.00
Tea Spoons, Extra Heavy	47.00
Dessert Spoons, Regular	54 50
Dessert Spoons, Medium	59 50
Dessert Spoons, Heavy	67 50
Table Spoons, Regular	70.00
Table Spoons, Medium	78.00
Table Spoons, Heavy	90 75
Soup Spoons	62 50
Dessert Forks, Regular	54 50
Dessert Forks, Medium	59 50
Dessert Forks, Heavy	67 50
Dessert Knives	63 50
Dinner Forks, Regular	70.00
Dinner Forks, Medium	78.00
Dinner Forks, Heavy	90 75
Dinner Knives	70.00
FANCY DOZENS	
Bouillon Spoons	38 00
Butter Spreaders	41 60
Coffee Spoons	19 00
Ice Cream Forks	41.60
Iced Tea Spoons	41.60
Orange Spoons	50 00
Oyster Forks	33 25
Salad Forks, Individual	50 00
SETS	Per Set
Baby Spoon and Fork, Large, in Roll	6.00
Baby Spoon, Fork and Knife, Large, in Roll	10.00
Child's Spoon, Fork and Knife in Roll	12 40
Salad Spoon and Fork	33 25
CARVING SETS	
Meat, 2 pieces, with guards	40 00
Steak, 2 pieces, with guards	13 50
FANCY SINGLE PIECES	Each
Berry Spoon	11 60
Bon Bon Spoon	4.25
Butter Knife	7 50
Cheese Server, H. H.	5 00
Beef Fork	6.25
Cold Meat Fork	8 25
Cream Ladle	4.25
Jelly Spoon	4 50
Gravy Ladle	10.00
Pie Server, H. H.	6.75
Preserve Spoon	8.25
Sugar Spoon	3 75
Sugar Tongs	5.00
Tomato Server	6.75

This pattern is made in a complete service. Additional pieces will be furnished if desired.

LADY WELLESLEY

Reflecting as it does the grace of a particularly decorative epoch of social life in America, it is appropriate that this pattern should bear the name of Lady Wellesley, one of the most captivating personalities of early American Society. Born Mary Caton, daughter of a distinguished Maryland family, she married the Marquis of Wellesley, brother to the Duke of Wellington. It is interesting to recall that her girlhood friend, Elizabeth Patterson of Baltimore, married Jerome Bonaparte, the youngest brother of Napoleon. Thus the two friends married brothers of the two most formidable military antagonists of the nineteenth century.

The Lady Wellesley pattern is presented in the bright and in the soft gray platinum finishes, either of which effectively discloses the enduring charm of its design.

This pattern is made only in

HERITAGE
SOLID SILVER
STERLING 925/1000 FINE

REVOLVERS

SMITH & WESSON

Model 1905, Military and Police

Six shots. Same as Model 1902 except in handle, which is square butt, checkered wood.

Nos.	032054	032056	038054	038056
Caliber	32	32	38	38
Barrel, in.	4	6	4	6
Wgt. each, oz.	15	32	29	32
Each	$32.50	32.50	32.50	32.50

This is a special police model and shoots 32-20 W.C.F. Caratridges; not adapted for high velocity or high speed cart ridges, 38 Caliber shoots 38 Smith & Wesson Special, also 38 Long Colt's and 38 Colt's Special Cartridges.

Model 1911, Heavy Frame Target

Six chambers, pull under 4 lbs., S. & W. target sight, checkered wood grip made of Circassion walnut, gold monogram, blued finish

No. 022116—22 Caliber, 6-in. barrel. Wt. 2 lbs 9 oz. Each, $33.00
Shoots 22 Caliber Long Rifle Cartridges only.

COLT

Officers' Model Target

Six shots, double action, solid frame, simultaneous ejection rubber stock, blued.

Nos.	0386½-OT	0387½-OT
Caliber	38	38
Barrel, in.	6	7½
Each	$40.75	40.75

Shoots 38 Long, 38 Colt Special and 38 S. & W Special Cartridges.

Police Positive Target.

Six shots, double action, solid frame, simultaneous ejection, rubber stock, blued.

No. 0226-CPT—22 Caliber, 6-in. barrel. Each $30.00
Shoots 22 Short, Long and Long Rifle Cartridges.

COLT

Police Positive Special, 32 Caliber

Six shots, double action, solid frame, simultaneous ejection, walnut western grip, blued.

Nos.	0324-CPS	0325-CPS	0326-CPS
Caliber	32-20	32-20	32-20
Barrel, in.	4	5	6
Each	$28.50	28.50	28.50

Shoots 32-20 Rifle Cartridges.

Police Positive Special, 38 Caliber

Six shots, double action, solid frame, simultaneous ejection, walnut western grip, blued.

Nos.	0384-CPS	0385-CPS	0386-CPS
Caliber	38	38	38
Barrel, in.	4	5	6
Each	$28.50	28.50	28.50

Shoots 38 Long Colt, 38 Short Colt, 38 Colt Special and 38 S. & W. Special Cartridges.

Army Special.

Six shots, double action, solid frame, simultaneous ejection, walnut western grip, blued.

Nos.	0324-AS	0326-AS	0384-AS	0386-AS
Caliber	32-20	32-20	38	38
Barrel, in.	4	6	4	6
Each	$30.00	30.00	30.00	30.00

Shoots 32-20 Rifle Cartridges, 38 Long Colt, 38 Short Colt, 38 S. & W. Special and U. S. Service Cartridges.

Can be furnished with rubber grips, from factory.

PISTOLS

COLT AUTOMATIC

Pocket and Target Models

No. 025—25 caliber, rubber stocks, six shot, rimless smokeless cartridge, full blued, 2-in. barrel; full length, 4¼ in. Weight, 13 oz. ..... Each, $17.00

No. 022-P—22 caliber, checked walnut stocks, 10 shot, 6½-in. barrel, full length, 10½ in.; full blued; uses 22 long rifle, rim fire cartridges . Each, $32 00

Pocket Model

Rimless smokeless cartridge, full blued, 3¾-in. barrel; full length, 6⅝ in. Weight, 23 oz.

No. 032-P—32 caliber, 8 shot, rubber stock.. .. Each, $20.50

No. 0380-P—.380 caliber, 7 shot, rubber stock .. " 20.50

Pocket Model

Seven shot, rimless smokeless cartridge, full blued, 4¼-in. barrel; full length 7⅛ in. Weight 32 oz.

No. 038-P—38 caliber, rubber stock ..... Each, $42 25

Military Model

Eight shot, rimless smokeless cartridge, full blued, 6-in. barrel; full length 9 in.

No. 038-M—38 caliber, rubber stock. . . Each, $43.50

Government Model

Seven shot, rimless smokeless cartridge, full blued, 5-in. barrel; full length, 8⅛ in. Weight, 39 oz.

No. 045-G—45 caliber, rubber stock . Each, $36.75

EXTRA MAGAZINES FOR COLT AUTOMATIC PISTOLS

22	Caliber Magazine	Each, $2.00
25	Caliber Magazine	" .65
32	Caliber Magazine	" .75
38	Caliber Magazine (Pocket or Military)	" 1.25
380	Caliber Magazine	" .75
45	Caliber Magazine	" 1.25

SAVAGE AUTOMATIC

Hammer, Grip Safety, Blued Finish, Rubber Stock

No. 032-S—32 caliber Automatic, ten shot, barrel 3¾ in., length over all, 6½ in. Weight, 20¼ oz. ..... Each, $20.00

No. 0380-S—380 Caliber Automatic, 10 shot; barrel, 4¼ in.; length over all, 7 in. Weight, 21 oz. . . . Each, $30.00

Extra Clips or Magazines. . " 1.50

Specify whether Clips are for old or new model.

REMINGTON AUTOMATIC

Automatic rimless pistol cartridge. Capacity of magazine, seven cartridges. An additional cartridge can be carried in the chamber. This is two more cartridges than can be carried in any revolver of similar caliber. Hammerless, with side ejection. Finish, browned (a durable dull black).

No. 51-32—32 Caliber. Length, 6⅝ in. Width or thickness, 8-10 in. Hard rubber stock. ..... Each, $19.50

No. 51-380—380 Caliber. Otherwise same as above. ..... Each, $19.50

Extra Clips . . . . Each, 1.00

Specify whether 32 or 380 Caliber.

A SMITH & WESSON ARM may justly be compared to a good friend—its qualities impress you more as you know it better. Balance, precision, and reliability are the factors which merit the title of SUPERIOR for each Smith and Wesson revolver. These are the qualities which earn confidence through years of service.

SMITH & WESSON

Manufacturers of Superior Revolvers

SPRINGFIELD
MASSACHUSETTS

Catalogue sent on request. Address Department K

No arms are genuine Smith & Wesson Arms unless they bear, plainly marked on the barrel, the name

SMITH & WESSON, SPRINGFIELD, MASS

Western Representatives:

Andrew Carrigan Company, Rialto Bldg., San Francisco, Cal.
Los Angeles, Cal., Seattle, Wash.

Say you saw it in GOOD HARDWARE

BICYCLE SUNDRIES

PUMP LEATHERS

For Bicycle and Automobile Pumps.

Pressed leather cups; sizes are for outside diameter of cylinder for which they are intended.

Size, inches	⅝
Wt., 100, oz..	8
Per 100	$0.80

Size, inches	⅞	1	1⅛
Wt., 100, oz...	8	8	8
Per 100	$0.80	1.00	1.20

Size, inches	1⅜	1¾	2
Wt., 100, oz...	10	16	16
Per 100	$2.40	5.00	6.00

Open stock.

BURNER TIPS

For Acetylene Bicycle Lamps.

Alcobike—Made from German lava. Per dozen $1.20

LAMP REFLECTORS

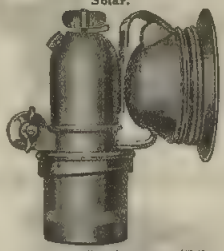
No. 24—Size 1½ inches; ruby reflector with nickel plated back and strap. Weight, per dozen, 1½ lbs. Per dozen $4.80

One dozen in a box.

BICYCLE LAMPS

GAS

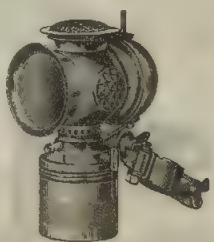
Solar.



Our made in America "Liberty Model" was especially designed and perfected to meet the demand for a popular priced quality lamp heretofore purchased abroad. Is of much superior quality both in material and workmanship, being made entirely of brass, except the bracket, with all parts highly polished and nickeled and easily accessible for interchanging. Has a large finely polished reflecting surface with a 3 inch convex front lens and projects a very bright light. Is fitted with a ⅛ inch gas tip and has a brass needle valve for regulating water flow and our standard bayonet lock carbide pot retaining device. Supplied with No. 1 Shipp Bracket.

Liberty Model with Bracket—Weight, per dozen, 22 lbs. Each.....$3.00

Packed 50 in a wooden case; one in a carton.



Made entirely of brass, handsomely finished in bright nickel plate and fitted with 1⅛-inch jewel side lights and 2½-inch double convex lens and aluminum reflector.

No. 1 Solar—Each $4.50

Extra Parts.

Lens—Each	$0.30
Reflectors—Each	.12
Burner tips—Each	.10
Wicks—Each	.10

Packed complete with bracket in a neat cardboard box.

Improved Searchlight.

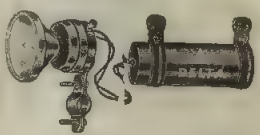
Searchlight improved is the neatest and best made gas lantern now on the market. The orignal searchlight was in a class by itself for beauty, quality and ease of operation but the improved article sets the pace for a real first-class lantern that can be sold at a price within the reach of all. It is absolutely gas tight, will not jar out and throws a clear brilliant and penetrating light.

No. 3—Easily operated, no complicated parts. Each $4.50

Finished in nickel and packed one in a neat pasteboard box.

ELECTRIC.

Delta.



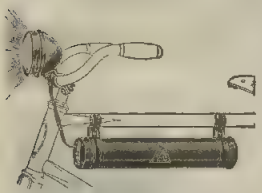
No. 27 Delta—Consists of a metal receptacle for dry cell with two clamps to fasten to bicycle frame, a socket and switch with bulb and reflector attached with clamp to attach to handle bar, all complete with cord but without battery. Each.....$2.40

Operates on one dry battery. Projects powerful light over 300 feet.

BICYCLE SUNDRIES

BICYCLE LAMPS

Delta Electric.



The most durable lamp on the market. Head and battery case made from heavy steel. Diameter of lens 3 inches. Weatherproof extra heavy wires. Headlight clamps to handle bar; it can be turned in any direction by means of a swivel joint. Switch is located on front end of battery case. Mazda bulb 2.8 volts constructed to exact focus, no adjustment required.

Tandem type battery container can be attached wherever most convenient, above or below cross bar or to frame; steel clamps hold case rigid, no swaying. Simple job to connect batteries.

No. 28A—Finished in black enamel Weight, each, about 2 pounds, com Each $2.90
plete with printed direction.

One in a box.

CYCLOMETERS

Veeder cyclometers are as accurately made as watches. They contain no springs to cause trouble. They are dust and water-proof and cannot skip; neither can they register too much. Thick, clear crystals. Records can be easily read from the saddle. They can be attached to any bicycle. Made of wrought metal, fully nickel-plated.

Regular.

No. 1—Registers mileage up to 10,000 and automatically repeats. Weight, per dozen, about 1¼ pounds. Per dozen $18.00

One in a box.

With Trip Dial.

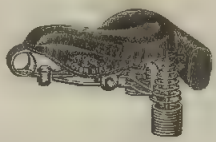
No. 2—Registers mileage up to 10,000 and automatically repeats; the additional dial may be set back to zero at will and can be used to show the mileage on each trip. Weight, per dozen, about 1½ lbs. Dozen $36.00

One in a box.

BICYCLE SADDLES

Model U special size 10½x7½, fine leather top, double coil springs.
No. 40—Each $1.70

Open stock.



No. 2 Motor Bike—The large top with three point coil suspension, double wire truss and adjustable clamp. A big seller. The tool bag is our No. 15-3. The combination makes a very attractive outfit. Length 10½ inches; width 8½ inches; weight, 4¼ lbs. Each.....$3.00

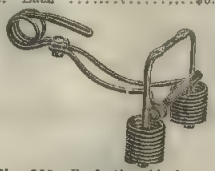
Open stock.

Climax—This is the new Climax. It has more graceful lines than heretofore. The finest bicycle saddle made, equipped with the famous Troxel spring action. Length 11½ inches; width 9 inches; weight 4¾ pounds. Each $3.80

Tip-Top—There has been a growing demand for a smaller suspension saddle for equipment. Length, 9¾ in; width 7½ in; wt., 3¼ lbs. Each $2.30

SADDLE SPRINGS

No. 100—Troxel Universal, black enameled or nickel-plated steel, the easiest riding saddle spring ever produced. Adjustable to fit any saddle. Each $0.70



No. 200—Perfection black enameled or nickeled steel, motorcycle type, will fit all saddles, an extremely easy riding spring. Each....$0.80

TOOL BAGS

No. 15-3—Elk grain leather bag; metal end. This is the best selling tool bag. Length, 7 inches; weight, 5½ ounces. Each $0.60

No. 8—A good bag at a reasonable price, made in grain or split leather. Length, 8 inches; width, 3¾ inches; weight, 2 ounces. Each.....$0.40

Open stock.

Gold Plated Cameo Brooches

Leaders in Their Line for Quality and Prices

No. 35J50. Gold plated, rose finish, embossed design, pink and white cameo. Per dozen..... **1.00**

No. 35J75. Gold plated, rose finish, open work, embossed design, large size, pink and white cameo. Per dozen..... **1.25**

No. 35J76. Gold plated, rose finish, embossed design, large size pink and white cameo. Per dozen..... **1.25**

No. 35J1. Gold plated, rose finish, fancy embossed design, pink and white cameo. Per dozen. **1.50**

No. 35J3. Gold plated, rose finish, fancy mounting, large size, pink and white cameo. Per dozen..... **1.50**

No. 35J8. Gold plated, rose finish, fancy mounting, large size, pink and white cameo. Per dozen..... **3.75**

No. 35J4. Gold plated, rose finish, fancy open work border, large size, pink and white cameo. Per dozen..... **3.25**

No. 35J200. Gold plated, English finish, fancy open border, surrounded with pearls with large pink and white cameo. Per dozen..... **3.75**

No. 35J6. Gold plated, rose finish, fancy open border, large fine cut pink and white cameo. Per dozen..... **4.00**

Gold Plated Cameo Brooch Assortment

No. 35J10. Gold plated, rose finish, 12 assorted patterns, fancy open work border. Twelve on fancy display card. Per dozen..... **3.75**

ARTIFICIAL MINNOWS

South Bend.

Trout-Oreno Assortments.

A neat, compact coat pocket size box, containing one each of the twelve standard colors of the No. 971 Trout-Oreno Baits. Each bait is in a separate compartment. Size of box, 6x4¼x⅝ inches.

No. 381—Weight, per assortment, ¼ pound. Per assortment $7.80
One assortment in a container.

Window Display Assortments.

This is a large and attractive window display to meet the demand for such an item and help promote sales for dealers by reason of the effect the display will have on anglers. It is very attractive, being lithographed in 8 colors; stands 25 inches high and is effectively arranged for displaying baits.

Contains 2 dozen bait as follows:

12 No. 973 Bass-Oreno, 1 each, 12 standard colors.
2 No. 963 Surf-Orenos, 1 each, colors W-SF.
2 No. 962 Midget Surf-Orenos, 1 each, colors RH RSF.
2 No. 913 Panetella Minnows, 1 each, colors SF-RSF.
3 No. 903 Minnows, 1 each, colors GCBW-Rain-G.
1 No. 923RH Standard Woodpecker
1 No. 925RH Midget Woodpecker
1 No. 904 Minnow color W.

No. 377—Display assortment. Each $20.40
Each assortment packed complete in a box.

Here's an attention compelling display—full of color and life—that'll create desire and sell tackle. It will make anglers stop, look and come in. For the dealer who cannot give much space to, or does not go extensively into the handling of Fishing Tackle, this display is a corker. Requires only a space 3½ feet by 1½ feet. The dealer who has more space will find it an attractive center unit for any tackle trim.

Consists of a center cut-out lithographed in eight colors, and full of life and action. At side is a snappy little three-color cut-out. Entire display stands about two and a half feet high. An ideal assortment for making a catchy display that will exceptionally well serve the dealer in connecting with South Bend extensive National advertising.

With the display are included the below selected South Bend Tackle items—each a favored and popular seller

11—No. 973 Bass-Oreno, 5 in RH color and balance in YP-F-R-Rain colors.
1—No. 975SF Pike-Oreno.
3 No. 963 Surf-Oreno Minnows.
3—No. 901 Midget Minnows.
1 No. 913SF Panetella Minnow.
3—No. 564 Weedless Spinner Hooks.
3 No. 1413-A Oreno Bass Fly Spoons.
1—No. 1380 Tandem Spin-Oreno.
1 No. 1375 Tandem Spin-Oreno.
2—No. 252 Fish Scalers.
1 No. 290 Display Tray of Spinners, Snap Swivels, Weights, Leaders, etc.
50 yds. 18-lb. Black-Oreno Line.
50 yds. No. 19 Peach-Oreno Line.
Also one empty No. 370 Display Stand.

No. 379—Weight, each, 6½ lbs. Per assortment.. $37.50
Packed one set in corrugated shipping container.

ARTIFICIAL MINNOWS

South Bend.

Panatella Minnow—Three Treble.

An under-water minnow of slender shape, such as this Panatella, has proven to be a most effective lure, particularly when the gamy ones would not rise or be attracted by the heavier minnow bodies. The Panatella can be credited with saving many trips from "fishermen's luck". A wonderful fish getter in Florida and Southern waters. Length of body 4½ inches. Approximate weight 9-10 ounces. Equipped with three treble hooks.

No. 913SF—Scale finish. Per dozen $10.20

No. 913RSF—Red scale finish. Per dozen 10.20

No. 913RH—Red head with white body. Per dozen 10 20

No. 913 Rain—Rainbow color. Per dozen 10.20

ASSORTMENTS

Bass-Oreno Assortments.

Extremely attrative display, made of substantial cardboard, printed in three colors. The design and illustration are commanding attention and interest. This display stand will promote sales for you and act as a silent saleman. Consumes very little space on counter or in window. Size when set up is 6 inches deep, 11 wide by 13 inches high.

No. 370—Assortment consists of two each No. 973 Bass-Oreno (wobbler) baits of the new popular colors, RSF, SF and G; weight, per assortment, 1 pound. Each.....$5.10
One in a box.

Bass-Oreno Assortments.

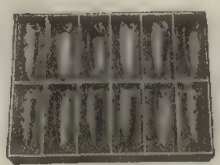
Display Box.

A very neat and compact assortment. Size of case, 14x6½x1½ in. Goldenrod yellow colored box with attractive red and black printing. Has six compartments, each holding an individual box of one bait. A wonderful "Silent Salesman." The assortment consists of the SF, RH, F, Rain, and RHA finishes.

No. 382—Assortment **complete.** Each $5.10

No. 383—Assortment of 12 pieces. Contains one dozen assorted standard colors of the famous No. 973 South Bend Bass-Oreno baits. Per assortment $10.20

Fly-Oreno Assortments.



This new bait is especially designed for use with a light fly rod and is a very dainty lure. It should be used preferably with a long gut leader instead of tying the enamel line directly on the bait. Put up in dozen assortments containing one each of the twelve standard colors.

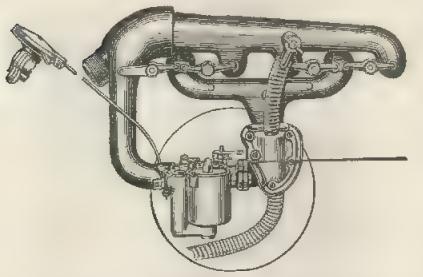
No. 380—Assortment of 12 flies. Length of fly 1¼ inches. Equipped with No. 9 bronzed, hollow point, double hook. Per assortment..$7.80

All above, one assortment in a box.

CARBURETORS AND ACCESSORIES

SPECIAL STROMBERG CARBURETORS

With Hot Spot



For Ford Cars

This equipment will insure vaporization of low grade gasoline. Every particle is made into dry, combustible gas and generated into driving power. That's the reason for the remarkable economy

Special priming device in carburetor makes easy starting.

The official mileage test made by the American Automobile Association (A. A. A.) is 31⅓ miles on a gallon of gas

For Fords, complete with all necessary fittings ready to attach without need of any tools but a wrench ..... Each, $23 62

For Chevrolet 490 Cars

This outfit consists of carburetor, hot spot, complete, flexible tubing, exhaust manifold and all necessary bolts and screws to attach

The official mileage test made by the American Automobile Association (A. A. A.) is 40⅔ miles on a gallon of gas

For Chevrolets, complete as above . Each $29 26

SPECIAL STROMBERG CARBURETORS

Without Hot Spot

Complete in box with all necessary parts or fittings ready to install and full detailed instructions for installing. **Be sure to state make, model and year of car.**

For Buick 6	Each,	$36 00
For Cadillac 53, 55, 57, 59	"	48 76
For Chandler	"	36 00
For Dodge	"	28 50
For Dort 4	"	27 76
For Durant 4	"	28 50
For Essex	"	42 76
For Gardner	"	27 76
For Jewett	"	36 00
For Hudson	"	48 76
For Maxwell	"	29 26
For Nash 6	"	43 76
For Oldsmobile	"	28 50
For Overland Light Four	"	29 26
For Reo 4	"	34 26
For Reo 6	"	53 76
For Star	"	27 00
For Willys-Knight	"	28 50

REGULAR STROMBERG CARBURETORS

Without Fittings

We can furnish a Stromberg carburetor equipment for every car, which equipment is made up from regular stock carburetor, controls, fittings and tubing. Price of each equipment will be gladly furnished, upon receipt of request giving year and model of car or truck.

Prices of carburetors quoted below are without fittings:

	Vertical Type		Parallel Type	
Size 1 requires double control,	**No. O1**	$41 26	**No. OC1**	$41 26
Size 1¼ requires double control,	**No. O2**	48 76	**No. OC2**	48 76
Size 1½ requires double control,	**No. O3**	56 26	**No. OC3**	56 26
Size 1 requires single control,	**No. OE1**	37 50	**No. OS1**	37 50
Size 1¼ requires single control,	**No. OE2**	45 00	**No. OS2**	45 00
Size 1½ requires single control,	**No. OE3**	52 50		

For Trucks

Nos.	M¾	M1	M2	M3	M4
Size, inches	¾	1	1¾	1¼	1¾
Each	$30 00	33 75	37 50	41 26	52 50

HOLLEY CARBURETOR

For Ford Cars and Trucks and Chevrolet Cars

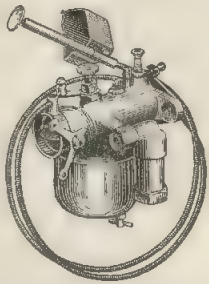
For many years the Holley Carburetor has been used as standard equipment on Ford engines. It meets the demands of Ford engines perfectly and contributes in no small measure to that efficient and economical performance which characterizes the Universal car in every part of the world. It is simple in construction, and gives trouble-free service throughout the life of the car

No. NH Holley Carburetor for Fords Each, $6 76
In lots of 6 Each, 6 00

No. SC—Model 1924 Holley Carburetors for all model Chevrolet cars Each, $15 00
Lots of 6 Each, 13 34

KINGSTON DE LUXE CARBURETOR

For Ford Cars and Trucks



All brass with steering column control and fuel strainer

It is constructed throughout of brass, highly polished. Capable of the most delicate adjustment, because of the Steering Column Control

This control operates directly in connection with the needle valve, with a pull button operating through flexible steel tubing. This button is attached to the steering column just below the steering wheel. It is easily installed, and aids materially in fuel saving, as well as in driving flexibility, as it affords a full 90 degree operation of the needle valve for either starting or extreme road conditions when required.

It is especially desirable for cold weather driving, as it makes starting very easy.

No. DK Kingston De Luxe Carburetor with steering column control . Each, $12 00

KINGSTON MODEL L-4-K CARBURETOR

For Ford Cars and Trucks

This is a combination of the famous Model L-4 Kingston Ford Carburetor, and the New Kingston Fuel Cleaner.

The nozzle is provided with an automatic accelerating jet, **an improved, patented and exclusive feature.** It gives more "pep", insures a quick getaway, permits smoothness of idling while in high gear and gives greatly added power and economy

No. L-4-K New Kingston Carburetor Each, $7 50

The New Niagara Wall Clock and the Celebrated New Haven Office, Kitchen and Wood Lever Clocks at Lowest Wholesale Prices

The intrinsic value is especially well represented in these fine clocks at these low prices. Manufactured from the best materials obtainable, tested and regulated, insuring purchaser of exceptional accuracy

PRICES EACH

Mahogany Finish

NIAGARA WALL CLOCK

A Practical Attractive Wall Clock that answers all objections to Wall Clocks and at a Reasonable Price

White Enamel Finish

Not until the advent of the new **NIAGARA WALL CLOCK** has it been possible for us to offer for sale a clock that is practical, attractive, reasonable in price and at the same time is economical to maintain and **never requires winding.** This clock is not only an accurate timekeeper, but it runs for well over a year on one No. 6 standard dry cell battery, which can be obtained anywhere

In all offices, schools, shops, factories, hotels, kitchens, restaurants, clubrooms, stores, etc., there is a place and a need for a wall clock

DESCRIPTION OF NIAGARA WALL CLOCK

Mechanism The mechanism employed is our new improved movement,—simple and compact. It has fewer parts than any other high-grade clock movement. This movement has been thoroughly tested and proved. It will keep as consistently accurate time as any clock movement now manufactured no matter what the price.

The Case Only the best material and workmanship are used in the manufacture of these cases. They are finished in three lustrous finishes, mahogany, oak or white enamel, suitable for use in any environment. Fine quality 8-inch white dial, all numerals bevel rim, jet black hands, Arabic numerals. Size of case, front, 11¾ inches square; back board, 12 inches square; depth, 4¾ inches.

The Battery The battery used in these clocks is a standard No. 6 dry cell battery, obtainable anywhere at nominal cost. This feature makes battery renewal easy and economical.

Simplicity The **NIAGARA** Wall Clock is simplicity itself. Anyone can put it up. It requires but two screws—one at top and one at the bottom. In but a few moments time the clock is in place and ready for service.

Accuracy Most important of all, the **NIAGARA** Wall Clock is an accurate timekeeper. Its reliability over a long period of time has been satisfactorily demonstrated by many satisfied users.

Packing Each clock is packed in an individual, durable corrugated board container, suitable for shipping by either parcel post or express. Breakage to clocks, when packed and shipped by us, will be made good at our expense.

Guarantee The manufacturer guarantees every clock against defects in workmanship and materials for a period of two years. If a **NIAGARA** Wall Clock does not fulfil these conditions, its price or a part of same will be made free of charge.

No. 4V801	Niagara Wall Clock in mahogany finish cabinet, each	**$23.40**
No. 4V802	Niagara Wall Clock in rich golden oak finish cabinet, each	**23.40**
No. 4V803	Niagara Wall Clock in lustrous white enamel cabinet, each	**23.40**

Drop Octagon

This is the standard of all office clocks. The style is popular and much in demand, while the celebrated New Haven make movement is symbol of accuracy and satisfaction. Height, 24 inches, width, 16½ inches, dia., 12 inches. Case, Solid Oak in rich Golden finish. Movement comes in 8-day, time or 8-day hour strike.

No. 1870	8-day time, each	**$12.40**
No. 1871	8-day strike, each	**13.80**

LAWEN KITCHEN CLOCK

Diameter, 6 inches

A small hanging clock especially designed for the kitchenette, bathroom or any room where a mantel clock is not practical. Also suitable for bungalows.

The case is either white enamel finish, fine mahogany finish or solid oak. Has a high grade, reliable 8-day lever time movement, a silver finished dial and convex glass.

This is the style clock you would be delighted to have grace your home. It is compact, well made and finished, inviting and hospitably appearing. Choice of solid oak in a rich and highly polished golden finish, mahogany finish or neatly and expertly applied white enamel finish.

No. 1872	Golden Oak finish, each	**$10.90**
No. 1873	Mahogany finish, each	**10.90**
No. 1874	White Enamel finish, each	**11.90**

WOOD LEVER

Solid Oak, Mahogany or White Enamel Finish

Furnished in three size dials, 6, 8 or 10 inches. All fitted with the celebrated New Haven 8-day time movement. Your choice of the following:

Dial, 6 inches; height, 9 inches; width, 9 inches

No. 1875	Oak finish, each	**$10.90**
No. 1876	Mahogany finish, each	**10.90**
No. 1877	White Enamel finish, each	**13.00**

Dial, 8 inches; height 11½ inches; width, 11½ inches

No. 1878	Oak finish, each	**$12.65**
No. 1879	Mahogany finish each	**12.65**
No. 1880	White Enamel finish, each	**14.85**

Dial, 10 inches; height, 13½ inches; width, 13½ inches

No. 1881	Oak finish, each	**$13.75**
No. 1882	Mahogany finish, each	**13.75**
No. 1883	White Enamel finish, each	**15.85**

New Haven Clock Co.'s Fine Gallery, Balcony and Regulator Clocks

INTRINSIC VALUE FULLY REPRESENTED IN EACH CLOCK AT THESE LOW ATTRACTIVE PRICES.
PRICES EACH

12-INCH BALCONY

Height, 15 inches; width, 12 inches; dial, 12 inches. Has concealed pendulum. 8-day time movement. Guaranteed an accurate timekeeper. Case, solid oak or mahogany finish.

No. 1858 Golden Oak finish, each $16.00
No. 1859 Mahogany finish, each 16.00

12-INCH GALLERY

Height, 16 inches; width, 16 inches; dial, 12 inches. Has concealed pendulum. 8-day time movement. Guaranteed an accurate timekeeper. Case, solid oak or mahogany finish.

No. 1860 Golden Oak finish, each $16.00
No. 1861 Mahogany finish, each 16.00

REFEREE "A" REGULATOR

Height, 35½ inches; width, 15¾ inches; dial, 12 inches. 8-day time or 8-day half-hour strike. Case comes in solid golden oak or mahogany finish.

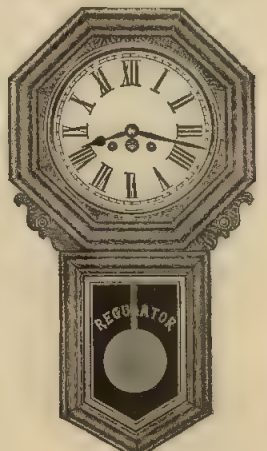
Solid Golden Oak

No. 1862 8-day, time, each $16.00
No. 1863 8-day half-hour strike gong, each 18.50

Mahogany Finish

No. 1864 8-day time, each $16.00
No. 1865 8-day half-hour strike gong, each 18.50

These movements are made of the finest material obtainable. The cabinets are made by skilled cabinet makers and finished with utmost care. These clocks are thoroughly regulated to insure accurate timekeeping qualities, then securely packed in a wooden case, so that shipment can reach destination safely.



ERIE REGULATOR

Height, 33½ inches; width, 13½ inches; dial, 12 inches. 8-day time, 8-day half-hour strike. Case, solid oak.

No. 1866 8-day time, each $15.25
No. 1867 8-day half-hour strike gong, each 17.45

No. 3043 CLOCK

Height, 42 inches; width, 10½ inches; dial, 12 inches. Case, golden oak or mahogany finish. Movement, 8-day time.

Mahogany

No. 1868 8-day time, each $21.00

Golden Oak

No. 1869 8-day time each $21.00

JANNEY, SEMPLE, HILL & CO.

AUTOMOBILE JACKS

TRUCK JACKS

Standard.

Of all the automobile garage jacks on the market, here is the latest and most efficient. It is one of the shortest jacks of this kind yet offered, allowing the operator to use it in less space and can be operated from the side of the car, beneath the running board if desired. One main feature is its ease of operation, there is no risk of injuring the operator, simply a few easy strokes of the handle and the car is raised or lowered. The jack has roller bearings in the wheels. Simple in operation and control, is compact and efficient in a narrow space. The lowest jack in its class for clearance with ample lift and adjustment. It has an extension rack bar, serving all height axles. It can be turned in a space not exceeding its own width. Short, compact, powerful and easy lifting are only a few of its remarkable features; to try it is to own one. Any weight automobile can easily be rolled about the garage.

No. 65—Plain Wheels—Length, over all, 68 inches; length of handle, 60 inches; height, down, 8 and 12½ inches; raised, 12½ and 17 inches. Weight, each, 80 pounds. Each $50 00

No. 65R—Rubber Tired Wheels, otherwise same as No. 65. Each 70.00

For heavy trucks, this larger size jack is a marvel, greater ease of operation and more convenient than any other model on the market. "Standard Easy Lift" are the only garage jacks built entirely of steel and malleable iron, thus insuring the utmost durability and satisfactory service. For years there has been a demand for a heavy dolly jack for truck work. This jack will serve to move the heaviest trucks about the garage. It is of the ratchet design, enabling it to be used in less space than jacks with the long sweeping handles. It is the safest jack on the market, there is no liability of the operator being thrown against the truck in releasing the jack. The truck is raised or lowered by a few easy strokes of the handle. The jack has roller bearings in the wheels and can easily be moved under load. The extension rack bar serves the higher axles.

No. 66—Plain Wheels—Length, over all, 88 inches; length of handle, 80 inches; height, down, 8 and 12½ inches; height, raised, 12½ and 17 inches. Weight, 110 pounds. Each ..... $ 70.00

No. 66R—Rubber Tired Wheels, otherwise same as No. 66. Each 100 00

AUTOMOBILE JACKS

Standard.

This is an efficient screw jack for light cars. This model is so constructed that the gears will not spread under the load. It has a heavy steel screw, machine-cut thread, and a well reinforced base. The regulating adjustment is one of the most efficient; it is easily reversed, and does not slip or ride on the gear. This jack is much stronger and heavier than many of the cheap screw jacks on the market.

No. 14—Height, screw down, 10 inches; height, screw raised, 15¾ inches; capacity of jack, 1,500 lbs. Weight, each, 4¼ pounds. Each.....$1.20

TRUCK JACKS

This jack of the ball-bearing screw type is without a doubt the easiest operating truck jack on the market. The ball-bearing is self-contained and carries the load, making the operation of lifting unusually easy. This model has the vertical lifting action and the gear will not spread under the load. The screw is of high-grade steel with machine-cut threads. This jack is so designed that it is not necessary to depend upon springs or friction devices to make the action absolutely positive either under no load or full load.

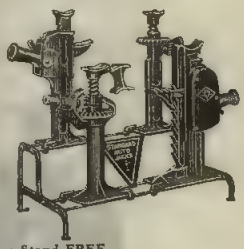
No. 33—Height, screw down, 12 inches; height, screw raised, 19 inches. Weight, each, 17½ lbs. Each..$11.30

This jack has a 5-ton lifting capacity and is a combination geared-ratchet jack with machine-cut gears and flat springs, which make it the easiest operating heavy jack on the market. This jack represents the finest quality in materials and workmanship which our enormous facilities are capable of producing. It was designed and built to withstand the most severe usage and is without a doubt the sturdiest truck jack ever made. The lowering mechanism is of the same simple construction as that used in regular "Standard" jacks, with the added feature of the gears, which enable the operator to raise 5 tons with ease. It has an extra heavy frame with unusually large base.

No. 50—Height, bar down, 13 inches; height, bar raised, 20 inches; capacity, 5 tons. Weight, each, 28½ pounds. Each $21.70

JACK DISPLAY STANDS

"Standard" Free Offer.



The dealer can sell more jacks by displaying them properly, if he will keep the models out on the show case instead of back in the bins, the customers will recognize the better jacks as compared with the average cheap equipment jacks in their cars, and the sales will easily be doubled. The stand displays 4 "Standard" jacks. **By ordering six "Standard" Jacks we will furnish the Display Stand FREE.**

This Towing Truck is made in both plain tread and rubber-tired wheels. The wheels have ribbed spokes and are unbreakable. Each wheel carries a 3-inch roller bearing. The front axle supports are adjustable for height with reversible offset, the chains secure the axle against side slip. The rear axle supports are adjustable for height. The "V" blocks will carry any rear axle without interference with truss rods, no clamps necessary. All uprights are of the best steel and will carry any load. The steel tongue is of tubular telescopic construction and may be removed from the truck. The axle is of the best solid steel and passes through the housing. The entire front or rear end of a car can be supported and towed, instead of carrying just one end of the axle as with some models. The truck is so designed as to absolutely withstand all strains and the blocks are so designed as to engage and properly support the axle of any make of car. The construction of the tongue gives greater strength and adjustability. The axle shaft is made from cold rolled steel with long roller bearings and connected to the wheels in such a manner that either wheels or axle may rotate to accomodate proper movements of the truck. The arrangements of the blocks, wheels and tongue gives greater leverage thereby enabling anyone to quickly place the truck and lift the heaviest type of car. The off-center arrangement of the blocks lock the car in an elevated postion to prevent accident or damage.

No. 70—Steel wheels, 14x3 inches; width, overall, 36 inches; tongue, closed, 7 feet 3 inches; tongue, extended, 12 feet 0 inches. Weight, 215 pounds. Each....$60.00

No. 70R—Rubber tired wheels, 16x3½ inches; width, overall, 36 inches; tongue, closed, 7 feet 3 inches; tongue, extended, 12 feet 0 inches. Weight, 215 pounds. Each $105.00

Standard Underground Cable Co.

Factories: St. Louis, Mo.; Emeryville, Calif.; Pittsburgh, Pa.; Perth Amboy, N. J.

Branch Sales Offices

BOSTON NEW YORK PHILADELPHIA WASHINGTON PITTSBURGH ATLANTA CHICAGO ST. LOUIS DETROIT KANSAS CITY SAN FRANCISCO LOS ANGELES SALT LAKE CITY SEATTLE

FOR CANADA Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont.

STANDARD Electrical Wires, Cables and Cable Accessories

For All Electrical Requirements; Telephone, Telegraph, Signal, Lighting, Power, Etc.

Products

Tubes, Rods, Shapes—Copper, Brass and Bronze.

Bare Wire and Cable—Copper, Bronze and Copper Clad Steel, solid or stranded, for all purposes. Write for C. C. C. Bulletin 202.

Magnet Wire—Round, Flat and Rectangular Shapes; Single, Double or Triple Insulation, Cotton or Asbestos.

Concentric Duplex Mining Machine Cable

Weatherproof and Slowburning Wires and Cables—Double or Triple Braid Insulation. Write for Bulletin 400.

Rubber Insulated Wires and Cables—"Sterling" National Electrical Code standard, "Tip Top" intermediate, 30% Hevea, (Para or plantation) and all standard or special specification material, for all classes of service. Write for Bulletin 500.

Mine Cables—All standard types of Mining Cables, Gathering Locomotive Cables, etc. Write for Bulletin 500.

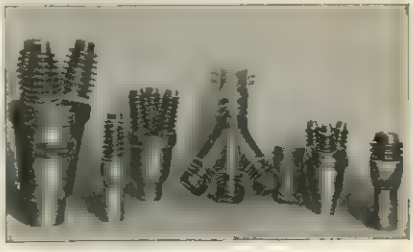
Lead Covered Cables—Rubber, Varnished Cambric or Paper Insulation, for all working voltages and all classes of service.

Armored Cables — "Wearproof," "Basket Weave," Double-Steel-Tape or Wire Armors furnished on any type of cable. Write for Bulletin 680.

Special Finishes — Weatherproof, Flameproof, Seine Twine, Circular Loom, Asphalted Jute or Special "P" finish (to resist acid mine water) furnished on any type of cable.

Bore Hole Cable—Any type of leaded or non-leaded cable furnished with special wire armor with supporting head, and served at intervals of 25 feet, so designed as to prevent the cable slipping inside the armor. Furnished with Bore Hole Cable Support, D.O.A. and "Mine Shaft" Terminals, complete. Write for Bulletin 700.

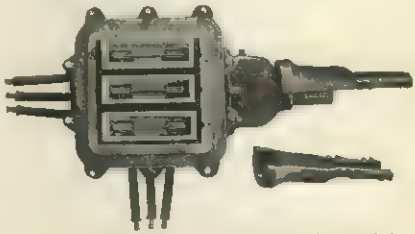
Bore Hole Cable Complete with Cable Support and Terminals



Group of Type DS (Outdoor) Terminals

Cable Accessories—Terminals: Type D.O. A. for outdoor service and Type D. S. for indoor service. Write for Bulletins 700 (D.O.A.) and 710 (D.S.)

Junction Boxes add flexibility to power cable distribution systems.



Type E, 3-Way, 5000-Volt Junction Box Arranged for Mine Shaft Service.

Jointing Materials, including "Ozite" Insulating Compound, Copper Connectors, Insulating Tapes, Jointing Tubes, etc. Suitable cable accessories insure proper protection and facilitate the installation and operation of cables. Write for Bulletin 740.

Construction Work—Our trained experts are available to install or supervise installation of our cables.

Communicate with our nearest office for further data, prices, etc. Over 42 years' manufacturing experience is back of our products and at your service.

STANLEY

FOUR-SQUARE HOUSEHOLD TOOLS

are a definite business asset for you.

They are made for home use. They are fast sellers. They will bring you more action for your money. A short easy line to handle that will turn quickly because of a constant demand which we are creating for you.

Advertising in large national consumer publications every two weeks insures a speedy movement of this line through your store at a profit, and you get this profit a number of times each year.

An advertisement of Stanley Four Square Household Tools appears in The Saturday Evening Post of May 10 and The Literary Digest of May 24.
Be ready.

STANLEY
NEW BRITAIN, CONN., U.S.A.
THE STANLEY WORKS • THE STANLEY RULE & LEVEL PLANT
NEW YORK CHICAGO SAN FRANCISCO LOS ANGELES SEATTLE

Each of the 32 tools comprising this line is individually packaged, marked and retail price-tagged.

Keeping Faith

Stanley went on record to back up the Four Square dealer with a consistent advertising campaign to the householder.

Full pages in color every other week have been the schedule since April and go steadily on.

Naturally, the profitable tie up is consistently to display Four Square Tools.

STANLEY

NEW BRITAIN, CONN. U.S.A.

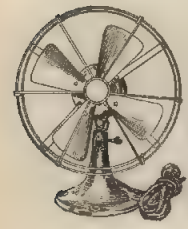
THE STANLEY WORKS - THE STANLEY RULE & LEVEL PLANT
NEW YORK CHICAGO SAN FRANCISCO AND SHERARD SEATTLE

When writing to advertisers please mention GOOD HARDWARE

ELECTRIC GOODS

ELECTRIC FANS

Star.



It has a motor that operates on alternating or direct current, equipped with a three-speed regulator switch in base. A hinged joint permits raising or lowering the fan blades at owner's discretion. The fan is adaptable either for wall bracket or desk use.

No. 8 Star—Made of iron and steel and attractively nickeled; 6 feet of cord and connecting plug; height 12½ inches, width 9 inches; 8 inch blade; weight each 5½ lbs. Each $10.00

One in a box.

Polar Cub.

The POLAR CUB electric fans are best solvers of the heat question yet struck upon. A fan that can't be beat at a price that can't be beat is the Model "G" 6-inch Polar Cub at $5.00. Think of it, a genuine electric fan, sturdy, strong and absolutely guaranteed—for $5.00.

Who would spend a sleepless night from heat—eat in a hot dining room—work in a stuffy office, when relief can be purchased for the small sum of $5.00. There's not one of your customers that will, if you have POLAR CUB on hand when summer breaks.

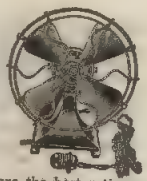
Model "G" 6-inch POLAR CUB is 8 inches tall, has 6-inch fans or blades, are made of solid brass, the motor is a "Universal" with brass brush caps and bronze bearings. Hand buffed and lacquered. Operates on direct or alternating current 110 volts (also supplied in 220 volts). Silent and smooth running. Throws maximum breeze. Equipped with 7 feet cord and plug ready for instant use.

Model "G"—6-inch Polar Cub. Weight, 3 lbs. Each $5.00
Packed one in a carton.

The POLAR CUB 8-inch electric fan is a larger fan with a larger capacity and at a very low price, a price so low that every one can afford the luxury of this sturdy and powerful fan. On scorching hot days and sultry nights nothing else is comparable to its cool refreshing POLAR CUB breezes. Frees one from summer discomfort at such a nominal cost that it will hardly show on your electric meter. Polar Cub throws a strong breeze at a very wide angle. Operates on 110 volts, A. C. or D.C. (also supplied in 220 volts). Solid brass hand buffed and lacquered blades. Bronze bearings. Equipped with 7 foot cord and plug, ready for instant use.

Model "G"—8-inch Polar Cub. Weight, 4 lbs. Each $6.95
Packed one in a carton.

Cyclone.



The Cyclone universal fans are exceedingly attractive, light in weight, economical in current consumption and maintenance and highly efficient.

They are ideal fans for the dressing room, bath room, library, den or small office. They operate smoothly, emitting only a mere drone, the unavoidable result of a large body of air being moved with great velocity.

They possess the scientific design and necessary qualities to insure the best satisfaction. Made in eight-inch size only, equipped with rheostat speed control giving five different speeds and shut-off. It has an extra heavy base which effectively prevents its creeping, and its design readily permits of its use either as a desk or wall bracket type. Handsomely finished in highly polished nickel and is liberally guaranteed against all mechanical and electrical defects.

Cyclone—Complete with 8 feet of cord and attachment plug. Weight, each, about 9 pounds.
Each $19.50

One in a box.

"Heritage" Solid Silver
STERLING 925/1000 FINE

MARTHA HILTON

PRICE LIST

PLATINUM FINISH	Per Dozen
Tea Spoons, Small	$21 50
Tea Spoons, Regular	24 00
Tea Spoons, Medium	30 10
Tea Spoons, Heavy	38 40
Dessert Spoons, Regular	44.80
Dessert Spoons, Medium	51 20
Table Spoons, Regular	67.20
Table Spoons, Medium	71.75
Soup Spoons, Round Bowls, Regular	48.00
Dessert Forks, Regular	48 00
Dessert Forks, Medium	55.70
Dinner Forks, Regular	67.20
Dinner Forks, Medium	71.70
Bouillon Spoons, Large	38.60
Butter Spreader, Large	42 25
Coffee Spoons, Large	19 30
Ice Cream Forks	42 25
Ice Cream Spoons	37 25
Iced Tea Spoons	42 20
Orange Spoons	53 75
Oyster Forks, Small	27 85
Pastry Forks	64 20
Ramekin Forks	38 60
Individual Salad Forks, Small	50 75

CUTLERY	Per Dozen
Dessert Knives, Stainless Blades	64 25
Breakfast Knives, Stainless Blades	67 50
Dinner Knives, Stainless Blades	70 90

CARVING SETS	Per Set
Steak Set, Two Piece, with Guard	13 50
Game Set, Two Piece, with Guard	27 00
Meat Set, Three Piece, with Guard	40 50

FANCY SINGLE PIECES	Each
Berry Spoon, Large	13 50
Cold Meat Fork, Large	13.80
Gravy Ladle	10.20
Cream Ladle, Small	4 20
Jelly Server, Small	4 20
Olive Spoon, Short	3.80
Olive Fork, Short	2 80
H. H. Pie Server, Small	6.60
Sugar Spoon, Large	3.80
Sugar Tong, Large	5.00
Butter Knife	5.40
Tomato Server, Large	13.50

MARTHA HILTON

In the market place of aristocratic old Portsmouth, in the reign of the second George, a slip of a girl, barefoot and half-clothed, tugged a pail of slopping water from the town pump to an unnamed home, and for her untidiness drew reproof from goodwife Stavers, immaculate mistress of the Earl of Halifax tavern.

The child was Martha Hilton, and it is said that the gage of destiny was in her retort:—that in spite of her dress she would ride in her chariot before she died.

Realization of this came quickly, and was then and there begun, for Governor Benning Wentworth was a spectator at the scene and took the girl to service in his home, where she grew in beauty and womanhood and a few years after her encounter with Madame Stavers was wed by the then widowed Governor.

Thus, in 1755 to the amazement of provincial New Hampshire society she became Lady Wentworth, mistress of the Mansion, and a few years later, on the death of Governor Wentworth, heir to his whole estate.

This pattern is made only in

"Heritage" Solid Silver
STERLING 925/1000 FINE

FINE STERLING SILVER NOVELTIES

ILLUSTRATIONS ACTUAL SIZE

POCKET PENCIL

Sterling silver case, etched and oxidized both sizes
No. J8818 Each **$1.50**

POCKET NAIL FILE

Sterling silver case, polished chased,
No. J8819 Each **$1.50**

CIGAR CUTTER

Solid gold, Roman finish, steel spring and blade, durable and serviceable
No. J8820 Each. **$5.00**

CIGAR CUTTER

Sterling silver, French gray, embossed, extra heavy, very d[illegible]
No. J8821 Each **$3.00**

MATCH SAFE

Sterling silver, engine turned design. Holds regular sulphur matches.
No. J8822 Each **$8.00**

MATCH SAFE

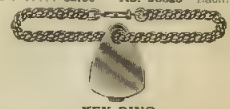
Sterling silver, engine turned design. Holds box of safety matches.
No. J8823 Each. **$9.50**

EMERY BALL

Silk cover and tassel, Sterling silver top.
No. J8824 Each. **$0.60**

TAPE MEASURE

Sterling silver, French gray embossed case, 3 feet
No. J8825 Each. **$1.85**



KEY RING

Sterling silver, polished, patented safety lock, bangle for engraving
No. J8826 Each **$1.50**

No. J8827 Gent's pocket comb, sterling silver back, each. . . **$1.60**

DORINE ROUGE BOX

Sterling silver, fancy hand engraved, contains rouge pad and mirror in cover, [illegible] sterling silver chain and ring
No. J8828 . . . . . **$3.00**

STAMP BOX

Sterling Silver
French Gray.
No. J8829 Ea. **$2.00**

WHISTLE

Sterling Silver
No. J8830 Ea. **$1.60**

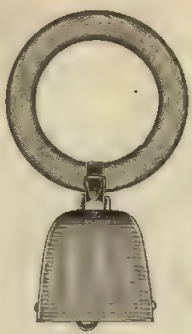
SPECTACLE CASE

All sterling silver, bright finish, engine turned and fancy hand engraved design. Plush lined.
No. J8831 Each. **$20.00**

FINE STERLING SILVER NOVELTIES

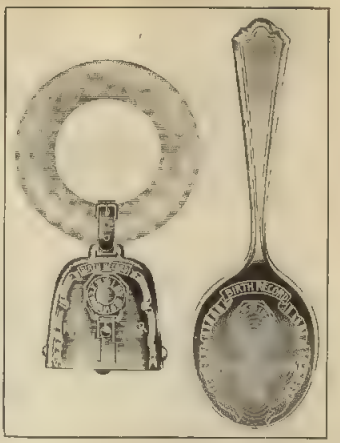
ILLUSTRATIONS ACTUAL SIZE

BABY RATTLE
Sterling silver bell, fine pearl ring
No. J8832 Each **$3.00**



BABY RATTLE
Fine pearl ring. Sterling silver bell
No. J8833 Each **$3.00**

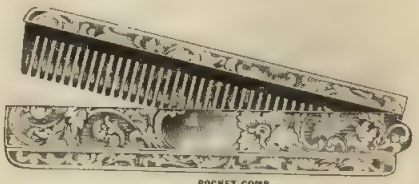
BABY RATTLE
Fine pearl handle. Sterling silver bell
No. J8834 Each **$3.75**



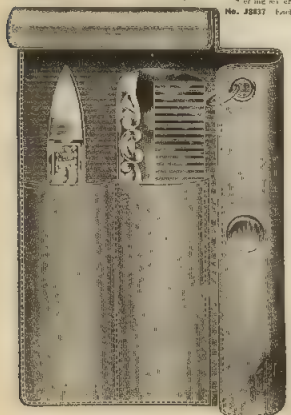
BABY SET
Pearl heavy teething ring. Sterling silver bell and Sterling silver baby spoon
No. J8835 Per set **$6.00**

SATCHEL TAG
Sterling silver, satin finish beaded border
No. J8836 Each **$2.00**

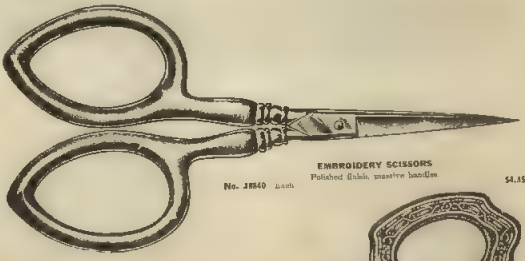
BABY TEETHING RING
Sterling silver, fine pearl ring
No. J8837 Each **$1.85**



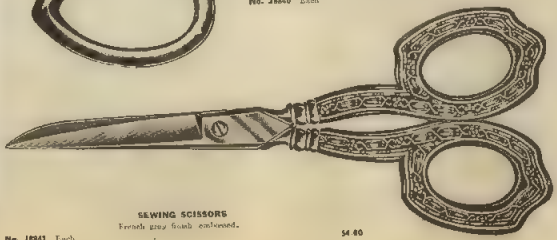
POCKET COMB
Sterling silver case
No. J8838 Each **$3.00**



GENT'S SET
Sterling silver 2 blade pocket knife and comb, put up in leather
No. J8839 Each **$4.25**



EMBROIDERY SCISSORS
Polished finish, massive handles
No. J8840 Each **$4.15**

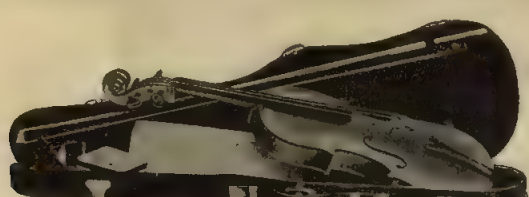


SEWING SCISSORS
French gray finish embossed.
No. J8843 Each **$4.00**

STILLSON WRENCH
HENRY & ALLEN
AUBURN N.Y. U.S.A.
Why Henry & Allen Stillsons Are Better Stillsons!
Because they are made strong at every point of strain, by a better distribution of metal
Because they actually take not only the size pipe for which they are intended, but also many standard fittings for that size
Because the material used is the best steel for wrenches that can be obtained, made from our own special formula
Because the treatment increases the natural toughness of the steel, and hardens the teeth deep enough to prevent crushing under terrific pressure
Because they are full hand polished—a better finish for a better product
Because we have been making wrench forgings for over 30 years and all the experience of those years is used to make a better wrench
Individual packing saves space, time and labor
Ask your jobber or write us for more information
Henry & Allen, Auburn, N. Y.
Henry & Allen
STILLSON WRENCH

Violin, Mandolin and Guitar Outfits

These Outfits are especially adaptable to the beginner. But in the higher grades these outfits make a wonderful combination of real value to the advanced musician both as to quality and price.



Showing Violin Outfit No. 938

OUTFIT No. 932 CONTAINS

One Imported Stradivarius model, medium red brown varnish polished Violin, ebonized hardwood fingerboard, adjuster and pegs, one Ceresan wood Violin Bow, ebony frog, Liberty silver lined, pearl inlaid dot, pearl slide, Liberty silver button, one Violin Case, wood, American, black varnish, half lined with flannel, handle and hooks, without lock, also one set of superfine quality Violin Strings, one piece Violin Rosin, and one Union Self-Teacher Book of Instructions. Price, complete $27.20

OUTFIT No. 934 CONTAINS

One Stradivarius model, rich brown color, gloss finish Violin, inlaid purfling and edges, ebony finger-board and tailpiece, one Ceresan wood Violin Bow, ebony frog, Liberty silver lined, pearl inlaid dot, pearl slide, Liberty silver button, one Violin Case, wood, American, black varnished, half-lined with flannel, handle and hooks, with lock, also one set of superfine quality Violin Strings, one piece Violin Rosin, and one Union Self-Teacher Book of Instructions. Price, complete $31.55

OUTFIT No. 936 CONTAINS

One Stradivarius model, rich reddish brown color, highly polished Violin, full ebony trimmed. Very good model and full tone of good quality, one Ceresan wood Violin Bow, ebony frog, Liberty silver lined, pearl inlaid dot, pearl slide, Liberty silver button, one Violin Case, wood, American, black varnished, half-lined with flannel, handle and hooks, with lock, also one set of superfine quality Violin Strings, one piece Violin Rosin, and one Union Self-Teacher Book of Instructions. Price, complete $33.80

OUTFIT No. 938 CONTAINS

One Stradivarius model, dark red varnish, highly polished Violin, purfling inlaid edges, ebonized pegs, tailpiece and finger-board, finely cut scroll and F holes, one Ceresan wood Violin Bow, ebony frog, Liberty silver lined, pearl inlaid dot, pearl slide, Liberty silver button, one Violin Case, imitation leather, black shellac finish, full lined with flannel, nickel lock, leather handle, trunk latches, also one set of superfine quality Violin Strings, one piece Violin Rosin, and one Union Self-Teacher Book of Instructions. Price, complete $43.00

OUTFIT No. 942 CONTAINS

One Stradivarius model, rich red color, fine quality varnish, very highly finished Violin, flamed back, sides and neck, full ebony trimmed, one Ceresan wood Violin Bow, ebony frog, pearl eye inlaid, pearl slide, full Liberty silver lined, Liberty silver button, one Violin Case, imitation leather, black shellac finish, violin straps, full lined with flannel, nickel locks, leather handle, nickel trunk latches, also one set of superfine quality Violin Strings, one piece of Cremanation Violin Rosin, and one Union Self-Teacher Book of Instructions. Price, complete $51.15

No. 9200 This outfit contains one of our popular Mandolins which has 9 ribs of maple and darkwood, mahogany half apron, 2 marked purfflings around sound-hole, fancy colored guard plate, walnut fingerboard, position dots, nickel-plated shell model tailpiece, patent heads with white buttons, one of our high-grade canvas cases, a Union Self-Instruction Book, which contains elementary instruction for playing the mandolin and also a number of easy and popular selections, a complete set of the best grade mandolin strings, a fingerboard chart, by the use of which every note on the fingerboard is clearly marked, and enables the beginner to acquire accurate fingering with much less study than heretofore. Also one set of mandolin tuning pipes, with four pipes, E, A, D, G, and by its use a mandolin can be tuned quickly and accurately . . . $17.10

No. 9201 This outfit contains one of our Jupiter Mandolins, which has 9 ribs, dark mahogany finish with black inlaying between, broad colored wood inlaying around sound hole, and edges very neatly celluloid bound, finished throughout with a high varnish finish, spruce top, mahogany finished neck, solid rosewood fingerboard, tortoise centered guard plate, pearl position dots, fitted with our own nickel plated patent head and nickel shell pattern tailpiece. All the accessories described in Outfit No. 9200 are contained in this outfit $24.00

No. 9202 We include with outfit one of our high-grade Lakeside Mandolins which has 9 ribs of rosewood and maple, neatly inlaid with ivory between each rib extending around sound hole edge, highly polished wood colored wood inlaying around sound hole edge inlaid with colored inlaying and ivory, white spruce top, mahogany finished neck, ebonized fingerboard, ivory inlaid, and fancy shell guard plate, pearl position dots, fitted with our own patent head and nickel shell pattern tailpiece. All the accessories described in Outfit No. 9200 are contained in this outfit $29.60

No. 9100 This outfit contains one of our ever popular Guitars, which is made of solid birch, back and sides stained mahogany finish, fine mahogany neck, 2 solid wood fingerboard with pearl position dots, inlaid nonadjustable nickel plated tailpiece, and strung with best steel strings, also one of our high-grade canvas cases and a handsomely nickel plated Capo d'Astro, as shown in the illustration, a guitar thumb pick, one of our guitar finger board charts by the use of which a player can easily master all notes and positions on the fingerboard. Union Self-Instruction Book, which not only contains the elementary instructions for playing the guitar, but also contains a number of easy and popular selections. A set of best grade steel strings, one of our guitar tuning pipes, with 6 pipes, E, B, G, D, A and E, which makes guitar tuning merely a matter of a few seconds with the youngest pupil $22.00

No. 9101 In this outfit we include our popular "Jupiter" Guitar, finished in dark mahogany, hand polished, with spruce top, fancy colored wood inlaying around sound hole edge, inlaid with fancy colored wood and bound with celluloid, handsome mahogany finished neck, fingerboard inlaid with pearl position dots fitted with our own heads and tailpiece, strung with the best grade steel strings. The case and all other accessories described with this outfit are the same as described in Outfit No. 9100 . . . . . $27.90

No. 9102 Outfit contains our handsome standard size "Lakeside" Guitar, which has a beautifully figured birch back and sides finished in a dark mahogany, elegantly hand polished, white spruce top, fancy colored wood inlaying around sound hole, bound in ivoroid, fancy inlaid strips down the center of the back, the neck is finished of fine mahogany, solid rosewood fingerboard, pearl position dots, fitted with our own nickel plated patent heads, and piece of high grade well tuned steel strings. The case and all other accessories described in Outfit No. 9100 are the same as described in Outfit No. 9100 . . . . . $35.30

Full Size Violin and Violoncello Bows — Imported

WELL MADE AND FINISHED; EXCEPTIONALLY LOW PRICED.

No. 9277

No 9277 Violin Bow, brazilwood, natural wood finish, ebony tip, full lined ebony frog, ivory tip, full G. S. lined ebony frog with Abalone pearl eyes, ebony and G. S. button, ivory ferrule, ebony and G. S. button, ivory and G. S. button, ivory and G. S. button, ivory

STRATFORD SECTIONAL SILVERPLATE

FACTORY "C" INTERNATIONAL SILVER COMPANY

SHAKESPEARE PATTERN

		Per Dozen
SPOONS		
Tea	Plain Box	$4.48
Dessert	Plain Box	8.12
Table	Plain Box	8.96
R. B. Soup	Plain Box	8.96
Sugar Shell	Plain Box	8.12
Sugar Shell	1 Lined Box	10.12
A. D. Coffee	6 Lined Box	4.92
A. D. Coffee	Plain Box	4.48
Child's	Plain Box	4.48
Orange	6 Lined Box	8.04
Berry Shell	1 Lined Box	24.84
Iced Tea	Plain Box	6.68
Educator	1 Lined Box	9.32
Baby, Bent	1 Lined Box	9.32
FORKS		
Breakfast	Plain Box	$8.12
Dinner	Plain Box	8.96
Child's	Plain Box	7.52
Oyster	6 Lined Box	8.12
Oyster	Plain Box	7.52
Cold Meat	1 Lined Box	18.60
Individual Salad	6 Lined Box	11.48
Educator	1 Lined Box	9.32
KNIVES		
Butter	Plain Box	$9.08
Butter	Lined Box	11.08
Butter Spreader	6 Lined Box	8.32
Jelly Server	1 Lined Box	13.36
LADLES		
Cream	1 Lined Box	$16.92
Gravy	1 Lined Box	20.88
Soup	1 Lined Box	50.40

CUTLERY

Solid Handle Dinner Knives, Straight Blade, 12 dwt., per doz.	$8.56
Solid Handle Breakfast Knives, French Blade, 12 dwt., per doz.	8.96
Solid Handle Breakfast Knives, Stainless Blade, per doz.	17.08
Hollow Handle Breakfast Knives, per doz.	22.92
Hollow Handle Breakfast Knives, Stainless Blade, per doz.	26.80
2-Piece 6" Solid Handle Carving Set, Stainless, per set	5.20

Illustrations Full Size

H & E-6-23

INTERNATIONAL SILVER CO

STRATFORD SECTIONAL SILVERPLATE

FACTORY "C" INTERNATIONAL SILVER COMPANY

SHAKESPEARE PATTERN

		Per Dozen
SPOONS		
Tea	Plain Box	$4.48
Dessert	Plain Box	8.12
Table	Plain Box	8.96
R. B. Soup	Plain Box	8.96
Sugar Shell	Plain Box	8.12
Sugar Shell	1 Lined Box	10.12
A. D. Coffee	6 Lined Box	4.92
A. D. Coffee	Plain Box	4.48
Child's	Plain Box	4.48
Orange	6 Lined Box	8.04
Berry Shell	1 Lined Box	24.84
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Educator	1 Lined Box	9.32
Baby, Bent	1 Lined Box	9.32
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Breakfast	Plain Box	$8.12
Dinner	Plain Box	8.96
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Jelly Server	1 Lined Box	13.36
LADLES		
Cream	1 Lined Box	$16.92
Gravy	1 Lined Box	20.88
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CUTLERY

Solid Handle Dinner Knives, Straight Blade, 12 dwt., per doz.	$8.56
Solid Handle Breakfast Knives, French Blade, 12 dwt., per doz.	8.96
Solid Handle Breakfast Knives, Stainless Blade, per doz.	17.08
Hollow Handle Breakfast Knives, per doz.	22.92
Hollow Handle Breakfast Knives, Stainless Blade, per doz.	26.80
2-Piece 6" Solid Handle Carving Set, Stainless, per set	5.20

Illustrations Full Size

H & E-6-23

INTERNATIONAL SILVER CO

STRATFORD SECTIONAL SILVERPLATE

FACTORY "C" INTERNATIONAL SILVER COMPANY

ROSEMARY *and* BETSY ROSS PATTERNS

SPOONS		*Per Dozen*
Tea	Plain Box	$4 48
Dessert	Plain Box	8.12
Table	Plain Box	8 96
R. B. Soup	Plain Box	8 96
Sugar Shell	Plain Box	8 12
Sugar Shell	1 Lined Box	10 12
A. D. Coffee	6 Lined Box	4 92
A. D. Coffee	Plain Box	4 48
Child's	Plain Box	4 48
Orange	6 Lined Box	8 04
Berry Shell	1 Lined Box	24 84
Iced Tea	Plain Box	6 68
Educator	1 Lined Box	9 32
Baby Bent	1 Lined Box	9 32
FORKS		
Breakfast	Plain Box	$8 12
Dinner	Plain Box	8 96
Child's	Plain Box	7 52
Oyster	6 Lined Box	8 12
Oyster	Plain Box	7.52
Cold Meat	1 Lined Box	18 60
Individual Salad	6 Lined Box	11 48
Educator	1 Lined Box	9 32
KNIVES		
Butter	Plain Box	$9 08
Butter	1 Lined Box	11 08
Butter Spreader	6 Lined Box	8 32
Jelly Server	1 Lined Box	13 36
LADLES		
Cream	1 Lined Box	$16 92
Gravy	1 Lined Box	20 88
Soup	1 Lined Box	50 40

CUTLERY

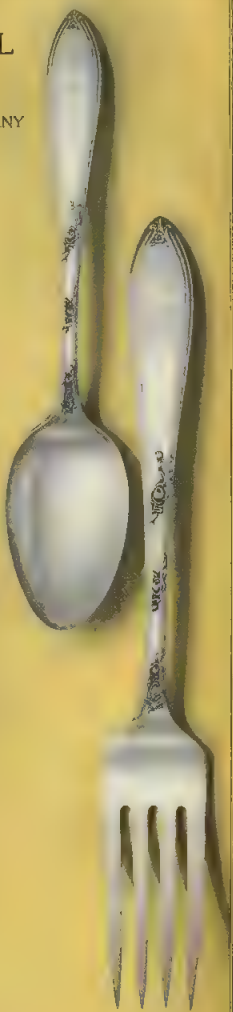
Solid Handle Dinner Knives, Straight Blade. 12 dwt, per doz. $8.56

Hollow Handle Breakfast Knives, per doz. . . 22.92

Hollow Handle Breakfast Knives, Stainless Blade, per doz. 26.80

2-Piece 6" Solid Handle Carving Set, Stainless, per set 5.20

BETSY ROSS PATTERN



ROSEMARY PATTERN

Illustrations Full Size

H & E-6-24

INTERNATIONAL SILVER CO

STRATFORD SECTIONAL SILVERPLATE

FACTORY "C" INTERNATIONAL SILVER COMPANY

SHAKESPEARE PATTERN

SPOONS		*Per Dozen*
Tea	Plain Box	$4 48
Dessert	Plain Box	8 12
Table	Plain Box	8 96
R B Soup	Plain Box	8 96
Sugar Shel.	Plain Box	8 12
Sugar Shell	1 Lined Box	10.12
A. D. Coffee	6 Lined Box	4 92
A. D. Coffee	Plain Box	4 48
Child's	Plain Box	4 48
Orange	6 Lined Box	8.04
Berry Shell	1 Lined Box	24 84
Iced Tea	Plain Box	6 68
Educator	1 Lined Box	9.32
Baby, Bent	1 Lined Box	9 32

FORKS		
Breakfast	Plain Box	$8 12
Dinner	Plain Box	8 96
Child's	Plain Box	7 52
Oyster	6 Lined Box	8 12
Oyster	Plain Box	7 52
Cold Meat	1 Lined Box	18.60
Individual Salad	6 Lined Box	11 48
Educator	1 Lined Box	9 32

KNIVES		
Butter	Plain Box	$9 08
Butter	1 Lined Box	11 08
Butter Spreader	6 Lined Box	8 32
Jelly Server.	1 Lined Box	13 36

LADLES		
Cream	1 Lined Box	$16 92
Gravy	1 Lined Box	20.88
Soup	1 Lined Box	50 40

CUTLERY

Solid Handle Dinner Knives, Straight Blade, 12 dwt., per doz. $8.56

Solid Handle Breakfast Knives, French Blade, 12 dwt., per doz. 8.96

Solid Handle Breakfast Knives, Stainless Blade, per doz. 17.08

Hollow Handle Breakfast Knives, per doz. 22.92

Hollow Handle Breakfast Knives, Stainless Blade, per doz. 26.80

2-Piece 6" Solid Handle Carving Set, Stainless, per set 5 20

Illustrations Full Size

H & L-6-23

INTERNATIONAL SILVER CO

Stroh Steel-Hardening Process Co.

804 Westinghouse Bldg., PITTSBURGH, PA.

PACIFIC COAST REPRESENTATIVES
San Francisco, Cal., Salt Lake City, Utah; Portland, Ore., Denver, Colo.
SOUTHERN REPRESENTATIVE H. M. Gassman, 848 Brown-Marx Bldg., Birmingham, Ala.
Sheffield, England Johannesburg, So. Africa

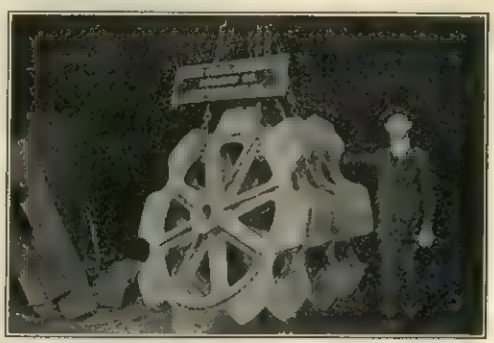
Products

The Wear-Proof Steel for

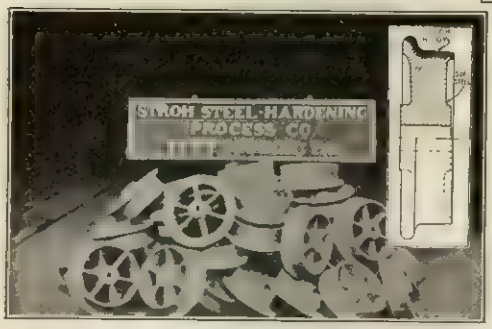
Mine Car Wheels
Sheave Wheels
Sprocket Wheels
Locomotive Wheels
Crusher Rolls and Jaws
Crusher Segments
Gears
Pinions
Crane Track Wheels
Stamp Mill Cams and Tappets

Guaranteed to render greater service PER UNIT OF COST than any Carbon Steel.

Further Information and Catalog Upon Request



The Stroh Alloy Teeth of Sprocket Wheels maintain the contour and reduce the wear to a minimum the teeth can be either separate or part of wheel The Soft Steel body permits ease of machining—boring and keyseating.



Stroh Steel Mine Car Wheels meet the demand for hard continuous service. All the advantages of cast steel — strength toughness, machineability and low cost—are incorporated in the body or non-wearing part of the wheel, the wearing portion, or tread only being Stroh Alloy Steel, is the greatest wear resistant metal known

The tread averages 50% harder than chilled iron. Wheels can be sprocketed or slid without danger of breaking or uneven wear

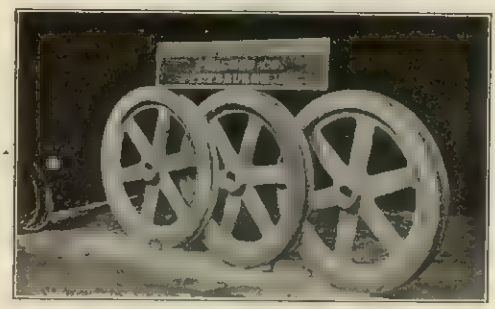
These wheels can be furnished with hammered tread at slight additional cost This method produces a refined Stroh Alloy that absolutely insures against wear and breakage

A trial will prove their great economy in saving and replacements.

In Stroh Steel Crusher Rolls as well as Crusher Jaw Plates the Stroh Alloy is of greater depth at top of lugs or corrugations than bottom or cylindrical surface, which is of lighter depth

In this manner the cutting or crushing edges are retained with consequent efficiency

These rolls can be easily machined, as the non-wearing portion is ordinary cast steel



The rope tread is composed of Stroh Alloy integral with the ordinary cast steel All sheaves have the tread smooth ground, permitting the haulage rope to glide with less friction or uneven wear Less danger of breakage and consequent lower operating costs characterize Stroh Steel Sheaves.

A trial will convince you of these merits.

All Stroh Gears can be easily machined, the teeth or wearing surface only being Stroh Alloy and in no way affects the casting. No separate hardening or treating necessary nor bushings or inserts required. They are specially adapted for hard continuous service or abrasive wear. Stroh Steel Gears and Pinions can be heated to shrink on shaft without affecting the Stroh Alloy.

Fewer replacements, lower operating costs, longer wear (4 to 10 times that of cast steel) characterizes Stroh Steel Wear-Proof Castings.

COMPRESSED GAS CORPORATION

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Mine Welding and Cutting

By reason of the distance which usually separates mines from machinery houses and machine repair shops, there is perhaps no industry in which efficient welding and cutting equipment is more truly indispensable or more profitably used than mining. And the Compressed Gas Companies, by virtue of the convenient location of their plants and the safety and efficiency of Purox gas and appliances, are peculiarly well equipped for mining service.

Purox Products

The Purox products which are especially adapted to and designed for the mining industry include: 99%+ oxygen gas; Purox welding torches; Purox cutting torches; Purox cutting attachments; Purox welding and cutting torch tips; Purox portable welding outfit; Purox welding rods; fluxes, hose, and other welding and cutting supplies.

Purox 99%+ Oxygen

Oxygen is efficient only in accordance with its purity and Purox oxygen is a guaranteed gas, every cylinder of which carries a written guarantee that it is more than 99% pure and consequently highly efficient in service. Because one per cent fall in oxygen purity means a loss of 20% in cutting efficiency, the value of 99%+ Purox purity will be everywhere appreciated.

Purox No. 20 Welding Torch

Purox Oxy-Acetylene Torches for Welding

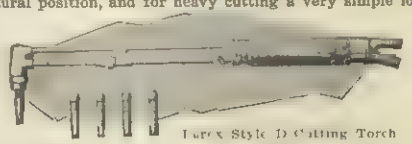
Purox torches have been called "tireless" because they never tire out themselves and never tire the operator. This is due to their precise design and construction, in which no detail has been neglected to produce a perfectly balanced tool; balanced as to weight and distribution of metal; balanced as to gas volumes, so that flash backs are prevented; and balanced as to pressures, so that safety is assured.

The two gases are thoroughly mixed at the same pressure and produce the ideal "neutral flame," having a volume ratio of 1.03 oxygen to 1.00 acetylene. This means that, working with a Purox torch, even an inexperienced welder can get quick, efficient, economical results and a solid, satisfactory weld.

For the general run of mine work, Purox No. 20 welding torch is especially recommended. This efficient little torch will perform any welding task required to be done around any mine or quarry.

Purox Oxy-Acetylene Torches for Cutting

In Purox cutting torches, gases are thoroughly mixed in the same safe manner as in Purox welding torches so that troublesome and dangerous flash backs are prevented and continuous work insured. Style "D" Purox cutting torch, which is especially recommended for general mine work, has a rated cutting capacity of 10 inches metal-thickness. A high pressure lever, controlling the gas flow, is operated by a slight thumb pressure, with the hand in a natural position, and for heavy cutting a very simple lock-



Purox Style D Cutting Torch

ing device holds this lever down and thus relieves the operator of all strain. Any wrought iron, steel plates, steel work or steel castings within the range of this torch's 10" cutting capacity can be easily and quickly cut by style "D" with a minimum of kerf and gas.

Purox No. 20 Oxy-Acetylene Cutting Attachment

For cutting work of 4-inch metal-thickness or less, Purox No. 20 cutting attachment hooked up to Purox No. 20 welding torch will meet every operating requirement. It costs little more than half as much as a complete cutting torch and yet, within its operating range, will do its work with the same safety, speed, thoroughness, economy, and satisfaction that characterize other Purox torches.

To convert No. 20 Purox welding torch into a cutter, you merely disconnect the welding goose neck at the handle, remove the mixer, and substitute this No. 20 cutting attachment which contains its own mixer.

Purox Welding and Cutting Tips

The finishing touch of a good torch is a good tip. Purox tips are made of long-lived, scientifically suitable material having high heat conductivity and fulfilling every requirement of the most exacting welders and cutters. They are drilled with true, concentric, straight holes and, when they become worn, can be easily dressed down and redrilled by an ordinary mechanic working with his standard tools, without losing any of their original efficiency. They cost little to replace, when, if ever, they wear out; the price ranging from 50c to $3.50.

Purox No. 20 Portable Welding Outfit.

Purox No. 20 Portable Welding Outfit

Purox No. 20 Portable welding outfit provides complete welding equipment in a single unit and consists of a No. 20 welding torch with 6 welding tips; mixer; wrench; hose connections; an acetylene regulator with pressure gauges and hose connection; an oxygen regulator with pressure gauges and hose connection; a cylinder wrench; acetylene hose; oxygen hose; welding goggles, and spark lighter; and a truck if desired. This is a complete and very convenient outfit for mine or quarry use.

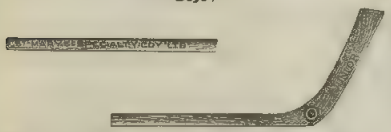
Purox Welding Supplies

Purox welding rods, fluxes, hose, and other supplies adapted to mine and quarry use, carry with them the same assurance of satisfaction which goes with Purox torches and can be provided to meet the particular needs of every condition and situation.

STICKS, PUCKS, ETC.

HOCKEY STICKS

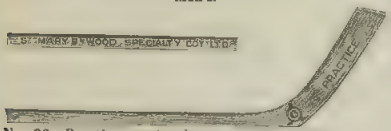
Boys'.



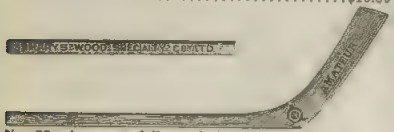
No. 20—Boys' Junior, good plain, boys' stick, good model 40 handle and a serviceable article. Approximate weight, per dozen, 7½ pounds. Per dozen $6.00

No. 22—Boys' Expert, a classy, clean, well made boys' stick, 40 handle, beveled blade, of excellent quality. Will make the boy happy. Approximate weight, per dozen, 7½ pounds. Per dozen 9.00

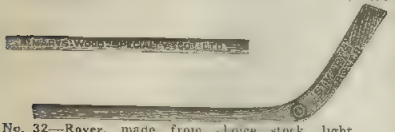
Men's.



No. 26—Practice, just what its name implies, regulation size and good value at its price. Approximate weight, per dozen, 12 pounds. Per dozen $10.80



No. 28—Amateur, full regulation size and model. Approximate weight, per dozen, 15 pounds. Per dozen $12.00



No. 32—Rover, made from choice stock, light pinned blade, and is especially designed for the Rover or lightning forward player and is a winner. Approximate weight, per dozen, 20 pounds. Per dozen $14.50

No. 34—Hockey King, made from selected stock, carefully manufactured, perfect in model and finish, finely balanced pinned blade (beveled) scrupulously graded by experts at the factory, blade slightly shorter than other models; designed for both amateur and professional players who appreciate a high grade well finished article. Approximate weight, per dozen, 25 pounds. Per dozen $17.50

No. 36—Reliance, made of the same quality of stock as the St. Mary's Special, but is not a pinned stick, nor is it oil finish; look out for the blue label which is the seal of superiority and guarantee of quality. Approximate weight, per dozen, 29 pounds. Per dozen 21.00

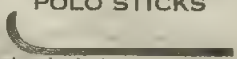
No. 38—St. Mary's Special, is a high grade, classy stick; selected for quality; and finished with a coat of water-proof gloss oil, which preserves it from the damp, and gives it an attractive appearance; this stick has also a pinned blade; look out for the red label, which is the seal of superiority and the guarantee of quality. Approximate weight, per dozen, 32 pounds. Per dozen 24.00

No. 40—Goal—This goal stick is one of the finest in its line on the market today. The built-on piece is fitted so snugly to the main part that it is hard to detect the joining point. Approximate weight, per dozen, 50 lbs. Per dozen .. $24.00

HOCKEY PUCKS

No. 1 — Official grade, made from best quality rubber, regulation weight and size. Per dozen $3.60

POLO STICKS



No. 1—Boys', made of oak, an exceptional value at the price. Per dozen $1.25

No. 3—Junior, made of oak, in a most substantial manner. Special model blade. Per dozen 1.84

No. 5—Practice, extra large blade, especially well made. Per dozen 2.50

No. 9—Special, second-growth ash, extra well made and oil finished. New model, wide blade. Per dozen 5.00

No. 13—Regulation, extra quality second-growth hickory, finished in our usual superior manner, new model, wide blade. Per dozen ... 7.00

HEEL PLATES

No. 30—Heel plates. Per dozen pairs $0.60

SUPPES FORGE AND FOUNDRY CO.

ESTABLISHED 1906

JOHNSTOWN, PA.

Shipping Facilities—Pennsylvania R. R. and Baltimore & Ohio R. R.

Products

Mine Cars.
Mine Car Wheels.
Motor Brake Shoes.
Cast Room Frogs.
Turnouts.
Grate Bars.
Boiler Doors and Liners.
Jones Stoker Repair Parts.
Sheaves and Stands.
Car Irons.
Forgings.
Round and Square Axles.
Pressed Steel Bumpers.
Mine Car Links and Pins.

Mine Cars

We build all types of wooden mine cars to suit any required specifications or any local conditions. The SUPPES Mine Cars are built of high class materials and by the best of workmanship, and the two combine to give strength, durability and easy running qualities that will please you. SUPPES car irons may be duplicated. All repair parts can be replaced and will fit. Our method of attachment of running gear to the bottom is such that there is no trouble from this source. Straps are provided on both sides of the planks with square holes, bolts fitting these holes exactly and provided with lock nuts prevent any movement, hence there can be no loosening.

We are prepared to furnish cars with Hyatt and Timken Roller Bearings when desired.

Mine Car Wheels

SUPPES Wheels are carefully made of the best materials, are properly proportioned, well chilled and properly machined, and are of the self-oiling type. The hub has large capacity and liberal openings to the axle, which permits use of soft grease or oil, as preferred. The details are shown in the accompaning illustrations below. Made in sizes from 8 to 20 inches in diameter.

We are prepared to furnish from stock or in a short time from specifications, castings, car irons and repair parts or any of the products given in our list of products. They are of the same character of excellence as our Mine Cars and Mine Car Wheels.

Modern equipment and shipping facilities enable us to give prompt service.

Send Us Your Inquiries

Tambour Mantel Clock

Rich Mahogany Finish

Tambour Mantel Clock, mahogany finish case, 15¾ inches long, 7¾ inches high. One day American made lever time movement. A very attractive premium clock.

No. 60W218. Each..... 2.95

SWINGING DESK CLOCK

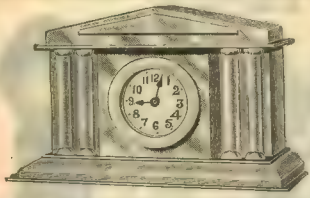
Desk Clock. Heavy round base with two uprights through which clock is fastened by screws and is adjustable to any position. 32-hour, 2-inch movement, height 4 inches.

No. 60W120. Each..... 1.35

Gold, Pink and Blue Finish Metal

White House Clock

Something New



Solid Metal, Pink or Blue Enamel Finish Boudoir Clock. Fitted with a good reliable time keeper, 4¾ in., base 3 in., a new attractive number of fine appearance, sells on sight.

No. 60W175. Each..... 2.85

8-Day Cabinet Clock Assortment

Cottage Assortment of 8-Day Clocks. Striking hour and half-hour on a cathedral gong, 10½ inches wide, 15½ inches high, 5-inch white antique dial, packed 3 to a case, 2 oak, and 1 mahogany, assorted patterns.

No. 60W181. Price for case of three clocks..... 14.50

THE SHURE WINNER PRICE LIST

RICH ARMOLA GOLD PLATED CLOCKS

Art Metal Clock. Rich Ormolu gold plated finish, fancy embossed floral and fancy decorations, 30-hour guaranteed timepiece. Height 7 inches. Width 4½ inches with 2 inch white dial. A large showy and dependable clock, absolutely guaranteed to give satisfaction.

No. 60W44. Each.. **2.10**

Special Gold Finished Clock, rich design; a new combination scroll and fancy pattern, good movement, fancy dial gilt reflector, heavy glass, one of the best values we ever had for either merchandise or premium purposes, for the latter it is especially adapted

No. 60W38. Each.. **1.35**

Clock Jewel Box. A Jewel Box and Clock combined, rich Ormolu gold finish, raised and embossed flower and leaf design. Padded silk lining, hinged cover. Footed complete with 30-hour timepiece, artistically mounted at top. Large, handsome and very attractive. Size over all 8⅝x3¼x11 inches high. One in a box

No. 22A19. Each.. **3.00**

Embossed China Clock

Imported China Clock, pure white, yellow tinted, height 7⅝ inches, width 3¾ inches, fitted with a 2-inch 24-hour movement. An attractive number.

No. 60W115. Each.. **1.85**

Ormolu gold plated clock, height 10 in. width 6 in., 24-hour high grade American movement that will give satisfaction.

No. 60W51.

Each.. **3.00**

Ormolu gold plated clock, height 9¾ in., width 6½ in., porcelain dial 2 in., with 24-hour high grade American movement that will give satisfaction.

No. 60W53.

Each.. **4.20**

60W51

60W153

Ormolu gold plated clock, height 7¾ in., width 4½ inches, raised ornamentations, finely finished design of Cupid playing mandolin on side; 2-in fine porcelain dial. Guaranteed 32-hr. movement. This may be classed as one of the best values we have to offer in clock line

No. 60W47.

Each **2.90**

60W47

Exceptional Values in 14-Kt. Ormolu Gold Clocks

Height 7½ in., silver 2-in. dial, 24-hour movement black spade hands A very attractive design with Cupid figure.

No. 60W151.

Each.. **2.50**

60W53

60W151

Height 7¾ in., width 5 in., 24-hour, 2-inch silver dial movement, black spade dial hands. Cupid figure and fancy floral design.

No. 60W152.

Each .. **3.75**

Height 8¾ in., silver dial, 2 in., 24-hour movement, black spade hands Artistic case, raised embossed design.

No. 60W152.

Each .. **3.25**

S. J. HARRY COMPANY

CONNELLSVILLE, PA.

GENERAL CONTRACTORS

Shaft Sinking, Tunnel Work and Diamond Core Drilling

Shaft Sinking

During the past twenty-five years we have been engaged in the sinking of Shafts, Slopes and Tunnels.

Our work is not confined to any particular district, as we are prepared to undertake work in any part of the United States and Canada.

We might mention the Catskill Aqueduct for New York City as one of our successful undertakings. On this job, during the past twelve years, we sunk sixteen shafts, drove over a mile of tunnel and excavated over 50,000 yards of open rock cut.

For the Phoenix Gypsum Company we sunk 1 shaft for gypsum rock.

For the Uniform Talc Company we sunk 1 shaft for talcum rock.

For the Port Henry Iron Ore Company we sunk 1 shaft for iron ore.

All of the work mentioned above is in the state of New York.

A few of our Pennsylvania contracts:

Brier Hill Coal & Coke Company, Brier Hill, 2 shafts.

H. C. Frick Coke Company, 4 shafts.

Jamison Coal & Coke Company, 4 shafts.

Pittsburgh Coal Company, 3 shafts.

Chartiers Southern Coal Company, 2 shafts.

For the Tennessee Coal, Iron & Railroad Company, Birmingham, Ala., we sunk 2 shafts and 1 slope.

For the American Salt & Coal Company, Lyons, Kan., we sunk 1 salt shaft 1,028 feet deep.

Diamond Core Drilling

We have been engaged in the testing of coal and mineral lands with Diamond Core Drills for the past twenty years, having covered the coal fields of twelve states since 1908.

Our facilities for handling this work are unexcelled. Our crews are old, experienced hands who have been with us for many years, who work together, thus enabling us to make better headway than is possible with constantly changing crews.

There is no job too large or too small for us to handle successfully.

Illustrations

The illustrations show different stages in shaft sinking for the American Salt & Coal Company, Lyons, Kan. The shaft is 1,028 feet deep and the views were taken from different angles during the process of construction.

THE R. G. JOHNSON COMPANY

HOUSE BUILDING, PITTSBURGH, PA.

Engineers and Contractors

Shafts — Slopes — Tunnels — Mining Construction

Our work in the sinking of shafts and slopes for new mines and the construction of air shafts for older workings, has taken our operations into several states for many of the older as well as the newer coal companies. We take pride in having been able to meet the exacting requirements of many of the largest coal mining companies in the last few years, a few of which we mention below:

Valley Camp Coal Company, Cleveland, Ohio.
Pickands-Mather & Company, Cleveland, Ohio.
The Consumers Mining Co., Harmarville, Pa.
(Subsidiary of Wheeling Steel Corp.)
West Penn Power Company, Pittsburgh, Pa.
Y. & O. Coal Company, Cleveland, Ohio.
National Mining Co., Pittsburgh, Pa.
(Subsidiary of Carnegie Steel Co.)
Pittsburgh Coal Company, Pittsburgh, Pa.
Duquesne Light Company, Pittsburgh, Pa.
Ford Collieries Co., Detroit, Mich.
Campbells Creek Coal Co., Cincinnati, Ohio.
Berwind-White Coal Mining Co., Windber, Pa.

A large part of our late work has been in shaft bottom construction, concrete arches, etc., — the sinking of new air shafts to take care of the ventilation of the increased development of mines, and the relining of older shafts.

Our experience has brought us in contact with varying conditions in many different sections and with the ideas of many different designers. We have made the designs and specifications for most of the work that we have done. This ability is at your command.

Our organization is composed of men who have spent their lives in shaft sinking. Our principal superintendents are stockholders in our company, and their interest in performing satisfactory work for our clients is a matter of company pride.

Portal of Double-Decked Slope 22' high by 11' wide, 540' long driven for West Penn Power Company at Logans Ferry, Pa. This is one of the openings constructed for this company in connection with their new Springdale Power Plant. After completion of the shaft we were employed in the development of their mine for a year.

KITCHEN ACCESSORIES

EGG BEATERS

DOVER PATTERN

No. 80—Family size. Length, 10¼ in. ..Dozen $3.00
No. 150—Hotel size. Length, 12½ in. ..Dozen 6.00
No. 200—Tumbler size. Length, 10¾ in. . . .Dozen 3.60

Nos. 80 and 200 one dozen, No. 150 one-half dozen in a box.
Weights per dozen, Nos. 80, 6 lbs.; 150, 20 lbs.; 200, 15 lbs.

TAPLIN'S

Double dasher, light running, center drive, malleable driving wheel. Action same as Ladd's Beaters.

No. 452—Weight per dozen, 7 lbs. .. .. Dozen $6.00

One dozen in a box.

LADD—ALL STEEL

Will do all that any beater will do, and do it better and quicker. The eight beating blades give more beating, agitating and aerating power. All steel, nickel plated.

No. 0—Small size. Weight per dozen, 6 lbs. . Dozen $7.00
No. 1—Family size. Weight per dozen, 9 lbs. . Dozen 8.00
No. 2—Hotel size. Weight per dozen, 15 lbs... .Dozen 12.00

One dozen in a box.

EGG BEATERS

WHIP-WELL

White enameled handle, one-piece wire frame, construction guarantees against cogs getting out of mesh. Exceptionally smooth running.

Whip-Well—Weight per dozen, 6 lbs..... .... Dozen $7.20

One dozen in a carton.

LADD—WOOD HANDLED

00

No. 00—Same as No. 0, except has neat white enameled wood handle. Weight dozen, 6 lbs..... .....Dozen $5.60

One dozen in a carton.

BLUE WHIRL

Very firm and strong. Made to last a lifetime. Twice as fast and half the work, when you use a Blue Whirl. All parts made rust resisting by special patented process. Handle and porcelain knob in kitchen blue enamel.

Tumbler Size—Weight, dozen, 10 lbs. Dozen $12 00
Medium Size—Weight dozen, 13 lbs .. Dozen 13 00
Large Size—Weight dozen, 16 lbs. Dozen 18 00

Each Beater packed in individual distinctive blue carton

SCREW CLAMPS

TAYLOR'S

Is especially designed for the use of cabinet and pattern makers, having extra large clamping surfaces, 2½ in. diameter. Steel bar, 1⅜x¼ in. Steel screw, 4x⅞ in. Tested to a safe clamping strain of 2400 lbs.

No. 18

Opens	Wgt. Doz.	Sgl. Doz.	Opens	Wgt. Doz.	Sgl. Doz.
*8 in.	50 lbs.	$21 00	18 in.	62 lbs.	$24 00
*10 in.	52 lbs.	21.72	24 in.	70 lbs.	25.44
12 in.	55 lbs.	22 50			

Mitre Clamps, with a spring action. Light and strong and the jaws are planed true.

*No. 36—Net weight per dozen, 21 lbs.. Single dozen $19.20

TAYLOR'S

Improved Column Clamp. A strong and very handy clamp. Provided with a ⅞-in. steel screw with right and left hand thread, thus doubling the speed in opening and closing.

*No. 47—With 4 ft. of chain. Weight, 7¼ lbs... Each $2.80

Extra Chain Weight, 1 lb. per ft.....Foot .17

Wrenches—Weight, 1¾ lbs.....Each .36

DOOR CLAMPS

STEARNS UNIVERSAL

Malleable Iron Jaws and Crank, Steel Screws, with Machine Cut Thread

No. 33—Can be attached to any rough lumber up to 2 in. thick and 2 in wide and wider. Weight dozen pairs, 12⅓ lbs.....Dozen pairs $33.00

A pair consists of one head and one tail piece.

PERFECTION

Steel Bar

NO.	Lgth Bar	Size Bar	Wgt. Pair	PAIR
30	3 ft.	¼x1½ in.	17 lbs.	$ 8 00
40	4 ft.	¼x1½ in.	19 lbs.	9 00
50	5 ft.	¼x1½ in.	21 lbs.	10 00
60	6 ft.	¼x1½ in.	23 lbs.	19 00
80	8 ft.	⅜x1¾ in.	50 lbs.	22.00

A pair consists of two complete clamps.

TAYLOR'S

Carpenters' Clamp. Clamping surfaces, 2 in. high by 1¾ in. wide Steel bar, 1⅛x⅛ in. Steel screw, 6½x⅝ in. Tested to a safe clamping strain of 7000 lbs.

No. 25

Opens	Wgt. Doz.	Sgl. Doz.	Opens	Wgt. Doz.	Sgl. Doz.
3 ft.	114 lbs.	$36 00	5 ft.	144 lbs.	$42 00
4 ft.	129 lbs.	39 00	6 ft.	147 lbs.	45 00

TAYLOR'S

Clamp Heads. Designed for light sash and door work. For use on wood bars 2⅛x⅞ in. Will not injure the bar and will not slip

*No. 31—Weight dozen pairs, 27 lbs.....Dozen pairs $15.00

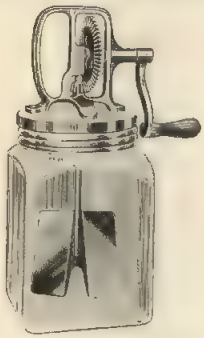
A pair consists of one head and one tail piece

*Not carried in stock. Factory shipment only.

THE LIGHTNING BUTTER MACHINE

The Most Effective

CHURN and MIXER



Made in 1, 2, 3 and 4-qt. Sizes

For Making Butter, Milk-Charged Butter, Mayonnaise Dressing, Cake Batters and Whips of All Kinds.

The Glass Churn having a SCIENTIFICALLY CONSTRUCTED METAL DASHER. This DASHER does not absorb the contents of the Churn and become sour and rancid; it makes our Churn practical for any kind of mixing because it does not carry the taint of one mixture into another; it does not swell, shrink, crack and finally fall to pieces as do those made of wood; it is, therefore, easy to clean and SANITARY.

With its patented propeller - like motion, this DASHER produces both a circular and downward motion, which explains its quick action as a butter maker and its absolute success as a butter merger and mixer.

The Taylor Mfg. Co.

Wollaston, Mass.

CHOPPERS, Meat and Food (Continued)

Landers, Frary & Clark, New Britain, Conn. "Climax." "Universal."
Master Cutter Mach. Co., Oakley, Cincinnati, O.
National Specialty Mfg. Co., Lehigh Av. & 3d, Philadelphia, Pa.
New Standard Corp., Mt. Joy, Pa. "De Luxe." "Regal"
Peck, Stow & Wilcox Co., Southington, Conn. "Favorite," "Ideal."
Reading Saddle & Mfg. Co., Reading Pa.
Regal—See New Standard Corp.
Reliman Mfg. Co., Mt. Joy, Pa. "Joy"
Russell & Erwin Mfg. Co., New Britain, Conn. "Russwin."
Russwin—See Russell & Erwin Mfg. Co.
Sargent & Co., New Haven, Conn. "Gem"
Smith's (John K.) Sons Co., 50 Broadway, Buffalo, N. Y. "Buffalo Silent."
Stimpson Scale & Mfg. Co., Northville, Mich.
Troemner, Henry, 911 Arch, Philadelphia, Pa.
Troy Metal Products Co., Troy, O. "Kitchen Aid" (Electric)
Universal—See Landers, Frary & Clark

CHOPPERS, Silage—See Cutters, Ensilage

CHOPPERS, Vegetable—See Choppers, Meat and Food

CHOPPING BOWLS—See Bowls, Wooden

CHOPPING KNIVES—See Knives, Chopping

CHRISTMAS PAPER BELLS—See Bells, Paper, Christmas

CHRISTMAS SNOW—See Snow, Artificial

CHRISTMAS STOCKINGS—See Stockings, Christmas

CHRISTMAS STOCKINGS, Filled with Toys—See Stockings, Christmas, Filled with Toys

CHRISTMAS TREE CANDLES—See Candles, Birthday

CHRISTMAS TREE FENCES—See Fences, Christmas Tree

CHRISTMAS TREE HOLDERS—See Holders, Christmas Tree

CHRISTMAS TREE ORNAMENTS—See Ornaments, Christmas Tree

CHRISTMAS TREE OUTFITS, Electric—See Outfits, Christmas Tree, Electric

CHRISTMAS TREE STANDS—See Holders, Christmas Tree

CHRISTMAS TREES, Artificial—See Trees, Christmas, Artificial

CHUCK ARBORS—See Arbors, Chuck

CHUCKS, Drill

Almond (T. R.) Mfg. Co., Ashburnham, Mass.
Brown (R. H.) & Co., New Haven, Conn. "Reid"
Buffalo Forge Co., 490 Broadway, Buffalo, N. Y.
Coit Ball Bearing—See Narragansett Mach. Co.
Cushman Chuck Co., Hartford, Conn.
Detroit Twist Drill Co., 2108 W. Fort, Detroit, Mich. "Graham"
Eastern Tube & Tool Co., 594 Johnson Av., Brooklyn, N. Y. "Ettco"
Ettco—See Eastern Tube & Tool Co.
Goodell-Pratt Co., Greenfield, Mass.
Graham—See Detroit Twist Drill Co.
Hoggson & Pettis Mfg. Co., New Haven, Conn. "Sweetland"
Horton (E.) & Son Co., Windsor Locks, Conn. "Morrow"
Improved—See Jacobs Mfg. Co.
Jacobs Mfg. Co., Hartford, Conn. "Improved." "Super"
Little Giant—See Westcott Chuck Co.
McCrosky Tool Corp., Meadville, Pa. "Wizard"
Magic—See Modern Tool Co.
Marvin & Casler Co., Canastota, N. Y.
Millers Falls Co., Millers Falls, Mass.
Modern Tool Co., Erie, Pa. "Magic"
Morrow—See Horton (E.) & Son Co.
Morse Twist Drill & Mach. Co., New Bedford, Mass.
★For descriptive data of the above, see Index on page 6
Narragansett Mach. Co., Providence, R. I. "Coit Ball Bearing"
★For descriptive data of the above, see Index on page 6
National—See Oneida National Chuck Co.
North Bros. Mfg. Co., Lehigh Av., Philadelphia, Pa.
★For descriptive data of the above, see Index on page 6
Oneida National Chuck Co., Oneida, N. Y. "National"
Pratt Chuck Co., Frankfort, N. Y.
Reid—See Brown (R. H.) & Co.
Skinner Chuck Co., New Britain, Conn.
Standard Tool Co., 6900 Central Av., Cleveland, O.
Stearns (E. C.) & Co., Syracuse, N. Y.
Super—See Jacobs Mfg. Co.
Sweetland—See Hoggson & Pettis Mfg. Co.
Trumps Bros. Mach. Co., Wilmington, Del.
Union Mfg. Co., New Britain, Conn.
Weaver Mfg. Co., Springfield, Ill.
Westcott Chuck Co., Oneida, N. Y. "Little Giant"
Whitney Mfg. Co., Hartford, Conn.
Whiton (D. E.) Mach. Co., New London, Conn.
Wizard—See McCrosky Tool Corp.

12 and 16 Size Complete Watches

EACH WATCH IN FINE DISPLAY BOX.

A. LINCOLN (Illinois)

21 Jewels, Adjusted Five Positions

21 ruby and sapphire jewels, gold settings, adjusted to temperature, five positions and isochronism; special quality hardened and tempered compensating balance, with gold screws including timing screws, due to roller escapement, sapphire roller and pallet jewels; jeweled steel escape wheel, entire escapement cap jeweled; conical pivots, gold center wheel; patent micrometric screw regulator; best quality Breguet hairspring, patent safety screw center pinion, recoil click; concaved, polished winding wheels; damaskeened in bright striped pattern; black enamel lettering

Fitted in the following cases

No. 334 25 year Bassine or Empire inside cap case $84.00

No. 335 25 year green gold Bassine or Empire inside cap case.. $86.80

No. 336 25 year green gold chased Empire inside cap case, special rad lum., raised figured or engr silvered or gilt dial $94.80

No. 337 14k Bassine Case, regular gold case $116.40

THE AUTOCRAT (Illinois)

12 Size, Special Model.

17 Jewels, Adjusted to Temperature

17 jewels; adjusted to temperature, hardened compensating balance with timing screws, double roller escapement; steel escape wheel; gold center wheel; Breguet hairspring; patent micrometric screw regulator; safety screw center pinion; concaved and polished winding wheels; recoil safety click; rayed pattern damaskeening; gilt lettering.

Fitted in the following cases

No. 342 25 year filled Bassine or Empire case $49.20

No 343 25 year filled green gold Empire case $50.40

No. 344 25 year chased green gold Marquis case, special radium lum., raised figure or engraved silvered or gilt dial..... $58.80

ILLINI (Illinois)

12 Size, Extremely Thin

21 Jewels, Adjusted Five Positions

21 extra quality ruby and sapphire jewels, special tempered compensating center arm balance having gold screws including timing screws; adjusted to temperature, five positions and isochronism, Breguet hairspring, double roller escapement; hardened and polished steel escape wheel, patent Illinois superior motor barrel, both pivots of barrel staff operating in sapphire jewels, patent recoil bar and pinion click; concaved and polished winding wheels; perfect pendant setting mechanism of exceptional simplicity entirely in movement, snap bezel, inlaid enamel figured dial.

Fitted in the following cases:

No. 338 14k green gold plain Bassine $204.00

No. 339 14k green gold engraved Directoire, no cap $232.80

No. 340 14k green gold plain Empire with cap $228.60

No. 341 14k green gold engraved Empire with cap $240.00

16 Size "Bunn," 18 Jewels

Railroad grade. 19 ruby and sapphire jewels, gold settings, adjusted to temperature, five positions and isochronism, spring tempered compensating balance; gold screws including timing screws, double roller, gold train, steel escape wheel, Illinois jeweled barrel, double sunk dial.

No. 345 Movement, hunting. Each $57.60

No. 346 Movement, open face. Each $57.60

16 Size "Bunn Special"

21 Jewels

Railroad grade. 21 ruby and sapphire jewels, gold settings, adjusted to temperature six positions and isochronism spring tempered compensating balance gold screws including timing screws double roller, gold train, steel escape wheel Illinois jeweled barrel double sunk dial.

No. 347 Movement, hunting. Each $61.25

No. 348 Movement, open face Each $61.25

The Above Prices Are for Movements Only. For Cases to Fit See Pages 29-31.

STOP WATCH

The Racer Timer

No. 349 Non-magnetic movement, records 1/5 second and has a 30-minute register, start, stop and fly back from the stem. Solid nickel case. Each $20.30

No. 350 Same as above with 1/10 second and 15 minute register Each $22.20

16 Size "A. Lincoln." 21 Jewels

Railroad grade. 21 ruby and sapphire jewels; gold settings, adjusted to temperature five positions and isochronism spring tempered compensating balance with timing screws double roller steel escape wheel gold center wheel, Breguet hairspring; patent regulator, double sunk dial

No. 351 Movement, hunting Each $57.00

No 352 Movement, open face Each $57.00

The Above Prices Are for Movements Only. For Cases to Fit See Pages 29-31.

MONTGOMERY NUMERICAL DIALS FURNISHED ON THESE RAILROAD GRADES WHEN DESIRED WITHOUT EXTRA CHARGE

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

The Brown Hoisting Machinery Co.

CLEVELAND, OHIO

Branch Offices:
NEW YORK 50 Church Street
CHICAGO 208 South La Salle Street
NEW ORLEANS Whitney-Central Building

BROWNHOIST

Branch Offices:
PITTSBURGH ....Oliver Building
SAN FRANCISCO Monadnock Building
LONDON, ENG .. 75 Victoria St., S. W.

Manufacturers of

Brownhoist Conveyors, Locomotive Cranes, Buckets, Etc.

Products

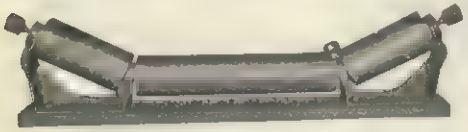
Belt, Apron and Chain Conveyors; Pivoted Bucket Carriers; Bucket Elevators; Crushers; Screens; Locomotive Cranes; Bridge Cranes; Buckets, Etc.

Engineering Service

Brownhoist maintains a staff of engineers, qualified by years of successful experience, who will gladly assist you in the solution of your handling problem. As builders of many types of handling equipment we can meet any requirement for the mechanical handling of all kinds of materials. Our engineering service is available to any plant contemplating the installation of material handling equipment.

Brownhoist Roller Bearing Conveyor Idlers

Two outstanding features in the construction of Brownhoist conveyor idlers are the improved lubrication system that requires attention but once or twice a year and the perfect and permanent alignment. This alignment is possible because of the one-piece idler supporting bracket and the steel channel on which it is mounted.



Brownhoist 3-Pulley Roller-Bearing Idler

The idler consists of a series of pulleys made of seamless steel tubing, turning on hollow steel shafts. These shafts form a continuous tube through which grease is supplied to all the bearings. Timken roller bearings are used on Brownhoist Standard idlers. This type of construction reduces frictional resistance to a minimum, which means longer life for the belt and lower power consumption. Brownhoist idlers can also be furnished with plain bearings.

Brownhoist Chain Conveyors

Brownhoist Chain Conveyors are designed for the hard service encountered in the handling of such materials as ore, crushed stone, coal, ashes, etc. They are built with Brownhoist drop-forged or

Brownhoist Pivoted Bucket Carrier

malleable iron chain and include all types of single and double strand elevators and conveyors.

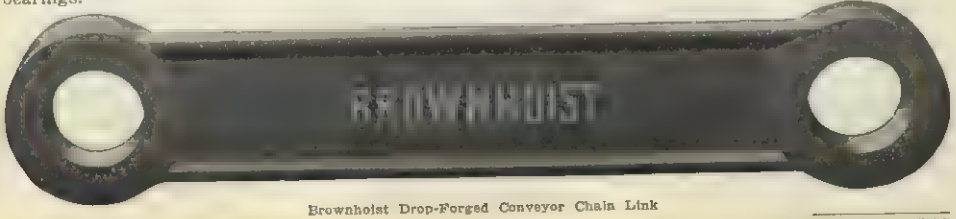
Brownhoist Drop-forged chain is designed particularly for heavy duty service. The links are drop-forged from high-carbon steel and are bored in a jig to exact pitch. The bar of the link is an I-beam section which produces great rigidity and strength with minimum weight. The large upset ends provide bearing surfaces that take all the wear.

Brownhoist Coal Crushers

Brownhoist Single-roll Coal Crushers are of rugged construction and yet so built that all parts are easily accessible. Large hand holes in the side

Brownhoist Single Roll Coal Crusher

frame permit the removal of any foreign materials that might become jammed between the roll and the breaker plate. These crushers are built in eighteen, twenty-four and thirty-inch sizes.



Brownhoist Drop-Forged Conveyor Chain Link

PURE LINSEED OIL

RAW AND BOILED

Raw, Strictly Pure

Especially adapted for outside work, does not dry as quickly as boiled oil, but has more elasticity. Also used as an animal physic.

Per gallon .....$....

In barrels or jacket cans.

Boiled, Strictly Pure

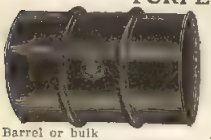
Darker in color than raw oil. The fatty and greasy portions are removed in boiling, causing it to move quickly, unite and dry. Not suitable for use in white paint as it darkens it slightly.

Per gallon ..... $....

In barrels or jacket cans.

Note—Extra charge for jacket cans

TURPENTINE



PURE GUM SPIRITS

For Industrial Purposes

Used for thinning paint to make it spread more readily and dry quicker. Especially for inside work. also used in varnish.

Per gallon

Barrel or bulk .....$....

5 gal. cans, 2 in a crate.....

5 gal tip over can, 1 in a crate .....

PINE TAR

Carefully prepared from the best North Carolina pine, is cooling and healing, and can be applied with Oakum to diseased feet with excellent results.

Size can	1 pt.	½ pt.
Per dozen	$2.40	1.30

COAL TAR

Barrels .....Per barrel $10.00

½ Barrels .....Each 6.00

NEATS FOOT OIL

No. 1 .....Per gallon $1.25

Extra charge for jacket can

HARNESS OIL

Per gallon

Harness Oil—Best for preserving leather, makes harness waterproof and pliable $1.50

Extra charge for jacket can.

FISH OIL

No. 1 .....Per gallon $1.25

Extra charge for jacket can.

LIME

Best grade lime.

Per barrel

Lime $3.00

Approximate weight per bbl 180 lbs.

CEMENT

PORTLAND

Best grade cement. Per bag

Portland—In 100 lb. bags $1.50

4 bags to the barrel.

LANTERNS

SUPREME

Cold Blast, Short Globe Style

Bright tin. Will burn 48 hours of continuous 10 candle power bright white light, absolutely wind proof, new inside lift patented. Positive standing bail, large brass oil filler, rising cone, locked-in safety burner, with 1 inch wick, directly accessible for cleaning and lighting. Every single part is hand finished. Exclusively designed.

Per dozen

No. 162—Height 14½ in., standard short globe, No 2 C. B. rising cone burner, weight per dozen 40 lbs...$24.00

One half dozen in a case.

Cold Blast, Short Globe Style

Bright tin. Will burn 35 hours of continuous 10 candle power bright white light, absolutely wind proof. Dome shaped solderless oil fount, with large brass oil filler, special cold blast tubes, perfect standing bail, new inside lift. Locked-in safety rising cone burner with 1 inch wick exposed for easy lighting, trimming and cleaning.

Per dozen

No. 160—Height 14½ in., standard short globe, No. 2 C. B. rising cone burner, weight per dozen 37 lbs..$21.00

One half dozen in a case.

No. 61—Same as No. 160 except has brass fount and red enameled frame, weight per dozen 40 lbs....$24 00

One quarter dozen in a case.

LITTLE SUPREME

PLAIN GLOBE

Bright tin. Will burn 30 hours with one filling. Strongly constructed. Has short globe No. 0 C. B. burner with ⅝ inch wick.

Dependable in operation.

Per dozen

No. 150—Height 11⅝ in., weight per dozen 25 lbs. $15.00

RUBY GLOBE

Bright tin Will burn 30 hours with one filling. Strongly constructed. Has junior short ruby globe. No 0 C. B. burner with ⅝ inch wick.

Per dozen

No. 151—Height 11⅝ in., weight per dozen 25 lbs....$18.00

One-half dozen in a case

LANTERNS

SUPREME

Hot Blast

Bright tin. Will burn 30 hours on one filling.

A very strong, durable and convenient hot blast lantern. Equipped with an inside lift and large, well placed brass filler. Easy to light and fill. Latest improvements including positive secured locking globe lift, safety lock-in burner, dome shaped, solderless oil fount and stamped tubes.

Per dozen

No. 210—Height 13¼ in., No. 1 burner with ⅝ in. wick, No. 0 globe, weight per doz. 28½ lbs. $12 00

One half dozen in a case.

Hot Blast, Dash

Bright tin. Red enameled. Will burn 30 hours on one filling

A very strong, durable and convenient Hot Blast dash lantern. Equipped with an inside lift and large, well placed brass filler. Easy to light and fill. Latest improvements including positive secured locking globe lift, safety lock-in burner, dome shaped solderless oil fount, stamped tubes and bracket.

Per dozen

No. 215—Height 13¼ in. No. 1 burner with ⅝ in. wick, No. 0 globe, weight per dozen 38 lbs.....$21.00

One half dozen in a case

"Casey" Railroad

Will stay lit under the worst conditions, of the wind and weather and withstands the roughest handling

Full steel-guard frame. The top ring with handle lugs stamped out of a single sheet of flat steel, body ring is also from flat steel. Flat sheet steel vertical guards. Guards are riveted into top ring and tongued and riveted into body ring

Per dozen

Casey Railroad—Weight per dozen 36 lbs.....$30.00

One dozen in a box

ELECTRIC LANTERNS

DELTA

Cold rolled steel case. Red enameled finish baked on. Wire bail, folding handles, nickel plated trimmings, deep silver plated reflector. Nickel plated sliding switch. Complete with necessary connections.

Operates on two regular 6 dry cell batteries, giving about 30 hours actual service. Throws a strong, white light over 100 feet ahead.

Each

No. 10—7½x4x7½ in. case with 2 8 volt bulbs, **without batteries**, weight each 2½ lbs. $2.75

One in a box.

GASOLINE LANTERNS

"NULITE" MATCH-LITE

Light with a Match

Finished and polished nickel plated, a lighting marvel for out-of-door use in city, town and country. Unaffected by high wind, rain, snow and sleet. Ideal for farmers, ranchmen, planters, dairymen, poultrymen, etc. 400 candle power. With built in pump. Each

No 3M Height overall 13 in., capacity 1 qt., burns 12 to 14 hours on one filling of common motor gasoline. Two No. 1B mantles, straight removable generator, No. 700 mica chimney, complete with wrench, tip cleaner, rubber washer and instructions, wt. each 3½ lbs .. $8.00

One in a carton

GASOLINE LAMPS

"NULITE" MATCH-LITE

Light with a Match

Nickel plated finish, white embossed, or blue tinted shade, most popular style of match generating, match lighting lamp, faultless lamp without wick and chimney. Does not throw a smoke, odor, grease, dirt, or is not dangerous. 400 candle power.

Height over all 22 in., two No. 1B rag mantles, No. 110 shade, capacity 3 pints, burns 14 hours on one filling, complete with wrench, tip cleaner, extra rubber washer, and instructions, weight each 6 lbs

Each

No. 110M—With white embossed shade $9.00

No. 110MB—With blue tinted shade 10.00

One in a carton.

Highly nickel plated finish, white embossed shade. Straight removable generator Does not throw a smoke, odor, grease, dirt or is not dangerous. 400 candle power.

Each

No. 210M—Height overall 17½ in., two No. 1B rag mantles, No. 199 shade, capacity 1 qt., burns 12 to 14 hours on one filling. Complete with wrench, extra generator pump and tip cleaner, wt. each 4½ lbs. $8.00

One in a carton

THE CENTRAL STEEL COMPANY

General Offices: MASSILLON, OHIO

Manufacturers of

AGATHON ALLOY STEELS

Products

We have daily production in all kinds of Agathon Alloy Steels such as: Nickel, Chrome-Nickel, UMA, Molybdenum, Chrome-Molybdenum, Nickel-Molybdenum, Vanadium, Chrome-Vanadium, Chromium, etc. We also formulate special analyses of steel to meet special requirements.

elastic limit twice that of ordinary steels. Elastic limit is the true test of resistance to bending, wearing and a general indication of quality and treatment of the steel, and these properties are checked by a Brinell hardness test of each piece of steel before shipment.

Alloy Steel For Mine Car Axles

The development of a special steel for axle service where roller bearings are used has made available heat treated alloy steel especially suited for mine car axles.

In designing axles for heavy duty service with high grade bearings it is necessary to provide an axle material equal in quality to the bearings used. A balanced design cannot be made by matching modern heat treated bearings with ordinary axle steels. Heat treatment as precise as the bearing manufacturers apply cannot be duplicated in the ordinary shop.

The steel and method of treatment used by the Central Steel Company in Agathon UMA mine car axles is such that properties corresponding in quality to the bearings are assured.

Axles which can be readily machined under ordinary shop conditions are supplied with an

Elastic limits in excess of 100,000 pounds are easily maintained while as high as 130,000 pounds elastic limit can be furnished in smaller sizes. Compare these figures with 60,000 pounds which is a very liberal figure for ordinary axle steels.

Figure on axles which take twice as much to bend but which are readily machined; axles which are furnished heat treated, straightened, cut to length and individually tested; axles which can be supplied to meet the most exacting requirement and which carry the unqualified guarantee of quality, workmanship and uniform dependability.

For designs requiring it, this axle stock can be furnished cold drawn to size, thus eliminating the necessity of machining bearing surfaces.

Submit your steel problems to our metallurgists and let them specify the proper analyses of Agathon UMA steel to cover your requirements.

THE FULTON PIT CAR COMPANY

Main Office and Factory
CANAL FULTON, OHIO

Fulton Mine Cars and Improved Roller Bearing Trucks

Products

Wood, Steel and Composite Mine Cars; Plain and Roller Bearing Wheels; Axles; Complete Trucks and Accessories.

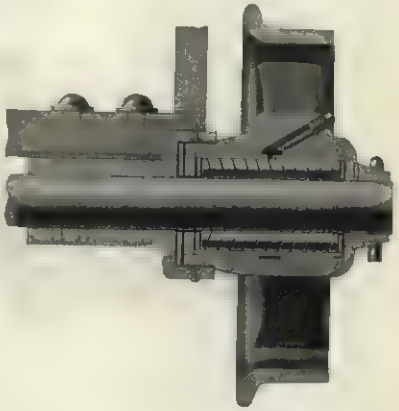
Fulton Cars and Trucks are the kind that endure.

Many are still in service that have been on the job fifteen to twenty years or longer.

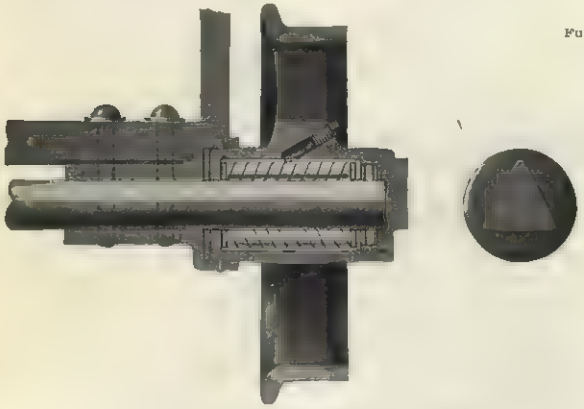
They still give satisfactory results **because they were built right.**

They have the stuff in them to stand up under long hard use, and they are not out of service at critical times.

We put the best we've got into FULTON cars—correct engineering design—high quality materials—thoroughness in manufacture.



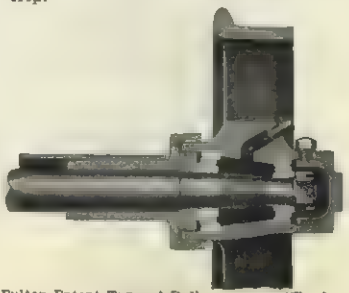
Fulton Patent Roller Bearing Wheel—Open Hub



Fulton Patent Roller Bearing Wheel—Closed Hub

The Mine Manager who equips his cars with the Fulton Roller Bearing Wheel, eliminates wheel replacements, due to wear in the hub and reduces friction 50%, power bills 20%, and lubrication charges 80%, and are some of reasons why Fulton users have kept on using them.

Tapered Roller Bearings have decisively proved their ability to cut down cost of mine car operation:
—by completely eliminating wear on axles. All moving contact is between the hardened and ground surfaces of the bearings themseves.
—by successfully carrying thrust loads as well as radial loads.
—by permitting the changing of wheels without changing axles.
—by their adjustability which takes up the play that must eventually occur. The Timken Tapered Roller Bearing does not wear as soon as other types and the adjustable feature prolongs the life of the bearing still further. By this adjustability also, wheels can be kept in perfect alignment at all times which cuts down wear to a great extent.
—by cutting lubricating cost in half. Ample space for grease, assures long service without attention.
—by reducing friction to a minimum. Less power is required to pull the trip.



Fulton Patent Tapered Roller Bearing Wheel—Closed Hub

CUCKOO CLOCKS

60W105

Miniature Clock, height 6½ inches, 2½-inch dial, carved and ornamented case of walnut wood, natural finish, winds by weights, brass works. A fine article for premium use.
No. 60W105.
Each..... .80
Per dozen..... 9.00

Cuckoo Clocks, height 17½ inches, width 13 inches, 4¼-inch dial, half-hour strike with cuckoo, winds with weights, white ivorized hands and figures, fancy carved heavy walnut case and pendulum. The best buy in cuckoo clocks.
No. 60W125. Each.... 7.50

Clock. Revere, mahogany finish case with glass panels in colors, 35½ inches long, 10 inches wide, 3-day time.
No. 60W208.
Each 10.75

Oak lever, 8 day, 6 inch chime movement, guaranteed by the Waterbury Clock Co., to be a good timekeeper.
No. 60W242. Each.... 4.25

Oak lever, 8 day, 8 inch chime movement, guaranteed by the Waterbury Clock Co., to be a good timekeeper.
No. 60W243. Each.... 5.10

The Harmony Musical Clock

A NEW DEPARTURE IN CLOCKS

The most beautiful and artistic design ever originated. It is not only an accurate timekeeper but also affords a great deal of pleasure, as the musical part can be played as desired, independent of the clock which need not be disturbed. It is also an ornament and will add charm and grace to any room in the home.

A great deal of time, thought and study have been expended to make this a decidedly novel, useful, ornamental and desirable article. It is sure to become exceedingly popular.

Patent Applied For

Harmony Musical Clock, solid metal case, gold finish, height 11 inches, width 5 inches. This clock was originated and designed by us and is a strictly high-class article. The workmanship is unexcelled and it is the only clock of its kind on the market. The two figures of cherubs in the upper panel are well proportioned in bas relief. The ribbon streamer is attached to a lyre occupying the upper center of case. Directly under the cherubs are lifelike bust figures of Wagner and Beethoven, the great composers; between these is a sheet of music showing cleff and notes. The oval border in center is neatly executed in a fancy scroll design. The lower half of case is an excellent design of trees and mountains, producing a beautiful scenic effect. The figure playing harp is in bas relief and perfect proportion. The movement is guaranteed American made, 30-hour time. 2½ inch dial easily read from a considerable distance.

Below the movement is fitted a well constructed music box which play two different tunes. This is independent of clock and can be wound and played whenever desired, which is a very desirable feature. The clock is certain to appeal strongly to all lovers of music, which means almost everybody. It is suitable for use in parlor, den, or living room, and is so artistic that it will harmonize with any color scheme or style of furniture.
No. 80W72. Each..... 4.25

THE IMPERIAL BRASS MFG. CO.

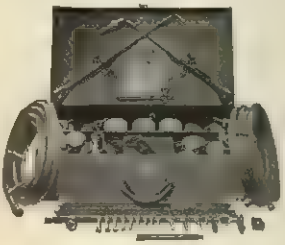
508 So. Racine Ave., CHICAGO

Manufacturers of

Oxy-Acetylene Welding and Cutting Equipment

Imperial Welding and Cutting Outfits—Oxy-Acetylene Process

Imperial Welding and Cutting Torches and Generator are approved by the Underwriters' Laboratories of the National Board of Fire Underwriters.



Imperial Equipment is easy to operate; any mechanic who carefully follows our simple instructions can quickly master the art of welding and cutting by the oxy-acetylene process. Imperial engineers assist beginners in every possible way.

No other equipment has a mixing principle like it—scientific, practical, years ahead of the others. No other has a regulator that so accurately and uniformly controls delivery of gas, from lowest to highest pressures. No other can approach the Imperial Torch for great working range with one unit.

All Imperial Welding and Cutting Outfits except the No. 2, include the strong, light steel carrying case shown above.

No. 1 Imperial Welding Outfit

For all general work, from thin sheet metal to heaviest castings.

Consists of Type B Imperial Welding Torch with 10 copper welding tips, extension, carbon burning torch, regulators, 4 gauges, hose, connections, goggles, hand-book, carrying case, complete supply of welding materials and spark lighter, ready for service. Each, $75.00.

No. 4 Combination Welding and Cutting Outfit

A splendid equipment for all general work, garages, etc. Combination welding and cutting torch performs both operations.

Consists of Type B Imperial Welding Torch with Cutting Attachment. Ten welding and 3 cutting tips, carbon burning torch, regulators, 4 gauges, hose, connections, goggles, hand-book, carrying case, complete supply of welding materials and spark lighter, ready for service. Each, $90.00.

No. 5 Imperial Duplex Welding, Cutting and Carbon Burning Outfit

Best all purpose apparatus obtainable at any price. Fully adequate to handle all welding and cutting for which the process is adapted.

Consists of a complete No. 1 Imperial Welding Outfit as described above, and also includes a Type EE Imperial Cutting Torch with 4 housings and 4 tips and an extra pair of goggles and 25-ft. lengths of hose. Each, $120.00.

Imperial Automatic Acetylene Generator—Type A

Approved by the Underwriters' Laboratories of The National Board of Fire Underwriters.

The Imperial Acetylene Generator possesses many marked advantages over other makes, the most important of these being the absence of weights, clock-work and complicated mechanism. In the Imperial Generator the carbide feed is simple, sure and dependable, and is automatically controlled by the gas consumed by the torch—the generating of the gas automatically stops when the torch is extinguished and automatically starts when the torch is relighted, thus automatically maintaining a constant, even gas pressure.

Interlocking safety levers make the Imperial Generator absolutely foolproof, and compel the users to follow the proper sequence of the operations necessary to start or shut off the generator. A dependable safety blow-off makes it impossible to obtain more than 15 lbs. pressure.

It can be used with any make of Welding, Cutting or Lead Burning Apparatus.

TABLES OF CAPACITIES OF IMPERIAL ACETYLENE GENERATORS

Size of Generator	Approximate No. of Torches Used at Same Time			Acetylene Gas Generated Per Hour	Price List
	Light Work	Medium Work	Heavy Work		
15 lbs.	1	1	0	15 cu. ft.	$155.00
25 lbs	2	1	1	25 cu. ft.	180 00
50 lbs	4	2	1	50 cu. ft.	275 00
100 lbs	10	5	2	100 cu. ft.	425 00

Prices and data on 200 and 300 lb. sizes on request.

Complete Catalog and Prices on Request

THE JOSEPH SCHONTHAL CO.

General Office
COLUMBUS, OHIO

Branch Offices
PITTSBURGH LACKAWANNA, N. Y. DETROIT

RAILS

For Thirty Years: "Quality and Service First"

Rails In Special Lengths Our Specialty

New Light Steel Rails

Following sections always in stock.

12 lb.	30 lb.
16 lb.	35 lb.
20 lb.	40 lb.
25 lb.	45 lb.

A. S. C. E. Section.

Relaying Rails

In stock at Columbus and other advantageous shipping centers.

56 lb.	75 lb.
60 lb.	80 lb.
67 lb.	85 lb.
70 lb.	90 lb.

Splice Bars, Angle Bars, Bolts, Nuts

Tie Plates, Spikes, and All Accessories

Sends you home on time with a complete knowledge of the days business

AT 5 30 P. M the store doors are drawn and the stock put away The total is then taken from the McCaskey Cash Register System register adding unit and the day's business records are entered in the McCaskey Business Recorder.

The detail strip is removed—the cash drawer is locked—and the registering unit of the system becomes a standard keyboard adding machine. The individual sales of each clerk are quickly totaled—the sales of each department are totaled and entered

With few additional entries in the Business Recorder you have completely distributed the records of the day's business and have your standings for the month to date

All this in just 15 minutes, and you know your profit and loss figures by clerks and by departments—day by day—week by week—month by month, and year by year

You start to appreciate the quick and accurate time-saving and error preventing system which stops the cash leaks in handling your business. It meets your every requirement and costs you less than one dollar a week on our monthly payment basis

Investigate this McCaskey Cash Register System now! Write or wire today and ask us to use the coupon Mail it today.

The McCaskey Register Co.

ALLIANCE, OHIO

Galt, Canada *Watford, England*

COUPON

The McCaskey Register Co.
Alliance, Ohio

Please send me information on the McCaskey System

for credit business ☐ check
for cash business ☐ (which)

Name

Address

City

THE NICOLA BUILDING COMPANY

General Office at
Penn Ave. and Denniston St.
PITTSBURGH, PA.

Building Contractors

Industrial Developments and Housing
Builders of Complete Mining Plants and Industrial Towns Since 1896

Industrial Developments including Town Layouts, Public Buildings, Community Buildings, Sewage Disposal and Housing, Coal Mining Plants, Power Houses and Shops.

We invite your correspondence.

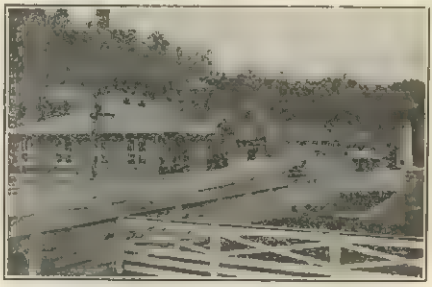
Our services include consultation and architectural work at your option.

Our past performance is your guarantee.

Illustrations show a part only of our 1924 construction.

Company Store Building

A Virginia Village



Public and Community Buildings

A Pennsylvania Village

J. J. WEST, Incorporated

926 6th Avenue, HUNTINGTON, W. VA.

Phones: 938, 5499

Branch Office, Madison, W. Va.—Phone 41

GENERAL CONTRACTORS

We Specialize in Industrial and Commercial Building.

Quick Service on Complete Mining Camps Anywhere in West Virginia, Ohio and Kentucky.

Court House, Boone County, W. Va.

Residence of F. C. Prichard, Huntington, W. Va.

Schools

Residences

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Mining Houses

Store and Office Buildings

All Kinds of Construction

Preliminary Plans and Estimates Furnished Free of Charge

Himlerville, Kentucky.

THE OHIO BRASS COMPANY

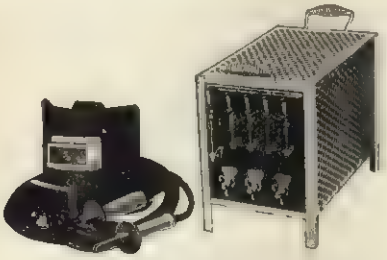
MANSFIELD, OHIO, U. S. A.

New York Philadelphia Pittsburgh Charleston, W. Va. Chicago Los Angeles San Francisco
Paris, France

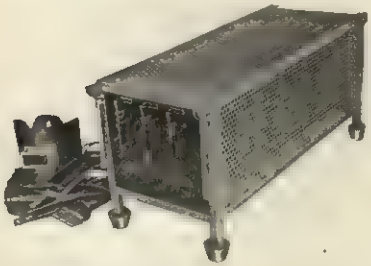
Products

Welding Machines; Rail Bonds and Third Rail Insulators. For detailed information write for General Catalog.

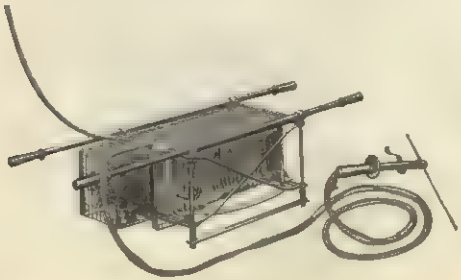
See Page 686 for Locomotive Materials and Page 448 for Line Materials.



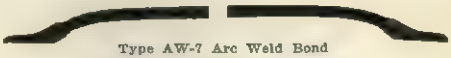
Type LW—Electric Arc Welder—250 Volts



Type LW—Electric Arc Welder—500-600 Volts

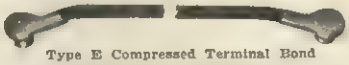


Grid Type Welder

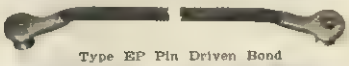


Type AW-7 Arc Weld Bond

Type AW-8 Arc Weld Bond

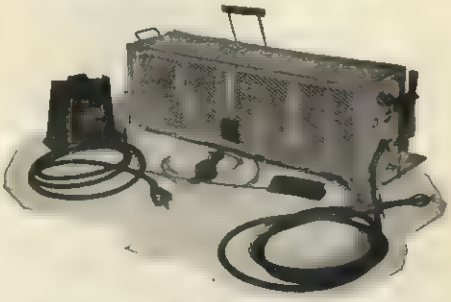


Type E Compressed Terminal Bond

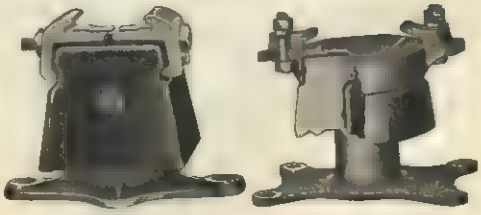


Type EP Pin Driven Bond

Type FP Concealed Bond



O-B Shunt Welder



Type D Third Rail Insulators Type A—Form 2

RAILWAY TRACK-WORK COMPANY

Clementine and Thompson Streets
PHILADELPHIA, PA.

"Ajax" Electric Arc Welder

Grinders, Grinding and Welding Supplies

Products

"Ajax" Electric Arc Welder, designed for rail bonding and general repair work. Also Welding Steel, Grinders, Grinding Wheels and Blocks.

"Ajax" Electric Arc Welder
Is a form of rheostat designed to reduce the voltage of direct or alternating current to a pressure suitable for arc welding.

Construction—A special high resistance coiled wire is supported by insulator bars carried by a light, sturdy steel frame. At one end of the frame is mounted a switch board which gives a complete flexible control of current, the whole forming a light portable unit of large capacity with ample ventilation and easy accessibility of all parts.

Portability—The "Ajax" Electric Arc Welder is light as possible, consistent with necessary strength to withstand usage to which such a device is ordinarily subjected. The Type RWY. Machine weighs 150 pounds; size, 18 inches by 28 inches by 36 inches. The Type IND. Machine weighs 55 pounds, size, 15 inches by 20 inches by 25 inches. Hinged handles drop parallel to the corner posts, presenting a minimum of obstruction.

Current Capacity—Defective welding is often due to a lack of sufficient capacity in the welding apparatus. In mines where the electrical supply is subjected to heavy loads, the voltage drops, frequently to fifty per cent of normal.

The "Ajax" Electric Arc Welder has sufficient capacity for satisfactory welding under all ordinary conditions.

Regulating switches provide a range of current from 19 to 333 amperes under normal line voltage with intermediate steps of 18 amperes each. In case line voltage drops to as low as 300 volts, 209 amperes can be obtained.

Wire and Wiring—The wire used is a special grade of very high resistance and will not oxidize. Machines in service after several years show no deterioration from frequent heating and cooling. The wiring scheme is very simple, the wires are all exposed to view and circuits can be easily followed.

Ventilation—The sucess of any welder of this type depends primarily on the complete ventilation. Here we claim superiority as no portion of the coils is tightly enclosed and the air has free access; a distinctive feature of this machine.

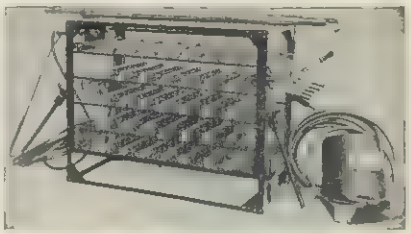
Accessibility of Parts—The internal wiring is so arranged that in case a break develops in any of the coils, the operator can quickly make repairs in the field, insuring against serious delay from ordinary accidental damage.

Insulators—The insulator bars are of special design and so arranged as to provide easy access to all wires and a maximum clearance and free ventilation between coils. They are made of special insulating material adapted to resist high temperatures.

Switches and Switch Board—A line switch is provided at the incoming end of machine by means of which the current can be cut off from all the coils. At the opposite end of machine is mounted a switch board for regulating the amount of current delivered at the arc.

A shunt switching device is provided to short circuit a portion of the coils where large currents are required and the voltage is much below normal. The device is unique, in that it gives complete control over the several groups of coils independently of the other groups, either when the full lengths of the coils are in operation or when they are shunted.

Plugs—Special plugs are provided for attaching the lead wires to machine. Plugs have wooden handles to protect the operator from shock, also to prevent short circuit if the plug on the trolley lead should, when detached, come in contact with the rail or other ground.



"Ajax" Electric Arc Welder

Trolley Pole—An ingenious hook is provided on the trolley pole for attachment to the trolley wire. Contact is made with the bright under-surface of the trolley wire, thereby eliminating danger of arcing and burning, which often results when contact is made with the top surface of the trolley wire, which is frequently heavily oxidized.

Equipment Complete—The equipment furnished with the Ajax Electric Arc Welder is complete, ready to be placed in operation and there is no additonal charge for any needed accessories. Equipment consists of:

1—Welding machine.
1—Electrode holder with 30 feet of flexible cable and connector
1—Trolley pole complete with 35 feet flexible cable and connector.
1—Face shield.

Portability, high amperage, range of current control, complete ventilation and accessibility of parts are special features of the Ajax Electric Arc Welder that have been worked out and developed to a high degree and insure a maximum of convenience, dependability and permanent service.

THE OHIO BRASS COMPANY

MANSFIELD, OHIO, U. S. A.

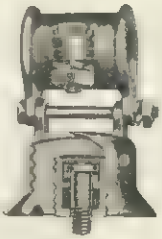
New York Philadelphia Pittsburgh Charleston, W. Va. Chicago Los Angeles San Francisco
Paris, France

Products

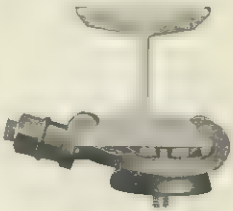
Trolley Hangers; Trolley Splicers; Single and Double Curve Pullovers; I Beam Clamps; Expansion Bolts; Feeder Wire Insulators; Feeder Wire Slings; Trolley Clamps; Insulated Switches; Trolley Frogs; Self-Feeding Mine Drills; Tee Wire Connectors; Mining Machine Connectors; Strain Insulators and High Tension Porcelain Insulators. For detailed information write for General Catalog.

See Page 686 for Locomotive Materials and Page 991 for Track Materials.

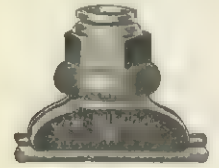
CM Trolley Wire Splicer



Coke Oven Hanger



I Beam Clamp



Wedge Clamp

M-3 Section Insulator Switch

Bulldog Clamp

Mansfield Clamp

Type D Trolley Frog

Universal Hanger

SK Adjustable Hanger

Type C Feeder Wire Insulator

Expansion Bolt

Insulated Turnbuckle

Timber Hanger

Roof Hanger

Quick Break Switch

Trolley Wire Splicer

THE OHIO BRASS COMPANY

MANSFIELD, OHIO, U. S. A.

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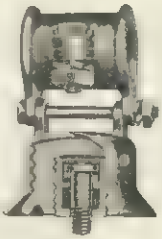
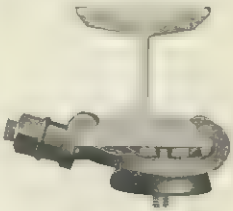
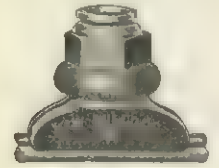
CM Trolley Wire Splicer



Coke Oven Hanger



I Beam Clamp



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Type C Feeder Wire Insulator

Expansion Bolt

Insulated Turnbuckle

Timber Hanger

Roof Hanger

Quick Break Switch

Trolley Wire Splicer

THE POWER MANUFACTURING CO.

98 Cheney Avenue, MARION, OHIO
BRANCHES AND AGENCIES IN ALL PRINCIPAL CITIES

Primm Oil Engines

For Main Power Units in Coal Mines — 25 H. P. to 300 H. P. Heavy Duty Semi-Diesel — **For Standby Units in Coal Mines**

General Description

"PRIMM" Oil Engines are of the Horizontal, slow speed, heavy duty, low compression type and operate on the two cycle principle, permitting the minimum of working parts. Proper ignition temperatures are obtained by the use of a Hot Plug when starting, which plug is heated by outside means. When the engine is in operation uniform temperatures are maintained by virtue of the patented Heat Compensator which is an exclusive feature in "PRIMM" Oil Engines.

Fig 1. Sectional View of Primm Oil Engine.

Surface ignition is obtained and strictly automatic operation is assured by virtue of the expansion and contraction qualities of the Heat Compensator. (See H, Fig. No. 1). An increase in the load will cause increased internal cylinder temperatures with consequent expansion of the Compensator which in turn brings it closer to the water cooled walls of cylinder head, so that the excess heat is carried off by the circulating water in cylinder jacket. Should the load decrease with a consequent decrease in internal cylinder temperatures contraction of the Compensator ensues which permits of more of the available heat of combustion being retained by the Heat Compensator for ignition purposes which accounts for the extreme flexibility of "PRIMM" Engines and their automatic regulation and operation under light or varying loads.

Fuel is injected into the combustion chamber by a simple, cam operated, plunger type fuel injection pump through a specially constructed Spray Plug, which enters at the rear center of the cylinder head, equipped with an atomizing nozzle designed so that the fuel is injected in six fine sprays in six different directions at right angles to the axis of the plug, against the sides of Heat Compensator (See I, Fig. No. 1). By this method the fuel is thoroughly mixed with all of the air in combustion chamber and perfect combustion is obtained under any and all load conditions.

Incorporated in all sizes of "PRIMM" Oil Engines is the well known crosshead feature which permits of the angular thrust of the connecting rod being taken up—on the lower crosshead guide instead of the cylinder walls. The weight of the piston is supported by the piston rod passing through the stuffing box which is packed with metallic packing so that the only appreciable wear on the cylinder walls is that due to the tension of the six piston rings. The crosshead construction also permits of full splash lubrication throughout with the exception of the cylinder which is lubricated by a mechanical force feed system, which system is used to augment the splash lubrication of all principal parts such as main journal bearings, crank pin, crosshead pin, etc.

The scavenging air compression chamber of the "PRIMM" engine is entirely separate from the crank case and together with the air transfer passages and ports is exceptionally large and of a shape which experiments prove will permit of the correct volume of scavenging air at proper pressures being allowed to enter the cylinder at the opening of the ports to obtain perfect combustion. Combustion is facilitated by the admission of moisture into the scavenging air charge, the amount being automatically regulated by the same Governor which regulates the amount of fuel oil injected, for varying load conditions,—the greater the load the more moisture admitted and if the load is lighter the moisture is proportionately reduced by the operation of the Governor.

"PRIMM" engines are completely enclosed and all working parts are protected from dust and dirt which makes them ideal for use in Industries where the operations are conducive to dusty atmospheric conditions. That the "PRIMM" is the simplest semi-Diesel engine built is an admitted fact so that for continuous service under varying loads such as are encountered in Crushing Plants, in Quarries where drag lines are operated, they are particularly well adapted.

The special Electric type "PRIMM" engine, on account of its extremely close speed regulation, is an ideal power unit for Electric Light and Power Plants and is equally as satisfactory for belt driving as for direct connecting to Generators and for single as well as parallel operation.

Friction Clutch Pulleys, with or without Out-Board Bearings, Reversible Clutches or Friction Clutch Couplings can be furnished to attach to and drive from either side.

H. P.	Speed	Weight	Bore and Stroke Inches	Main Bearings Inches	Crank Pin	Weight of Fly Wheels Lbs.
25	327	7900	10 x13½	4½x10	5 x 4	1890
35	300	10000	11¾x15¾	5 x12	5½x 4½	2190
45	300	12900	12⅝x17	5½x12	6 x 5	2275
55	277	15500	13¾x18½	6 x13	6½x 6	2865
75	277	16.00	15 x20	6 x13	6½x 6	2955
100	225	24500	18 x24	7 x14½	7½x 7	3845
125	200	34000	20 x24	8 x16	8½x 8½	5470
150	200	36000	22 x24	8 x16	8½x 8½	5590
200	225	46000	18 x24	8 x16	8½x 8½	3845
250	200	56500	20 x24	9½x18	10 x10	5470
300	200	59000	22 x24	9½x18	10 x10	5590

Fig 2 Primm Oil Engine Showing Right Hand or Operating Side

Fuel Economy: "PRIMM" Oil Engines are extremely economical in operation and carry an unusually low fuel consumption guarantee which is maintained throughout the life of the engine. The fuel and lubricating oil cost for running a "PRIMM" engine is only about one-third of a cent per horse-power-hour—one Kilowatt hour can be produced for about one-half of a cent.

THE LUBRICATING OIL consumption of "PRIMM" engines is as low as can be expected when size of machine is considered — 1000 to 1500 horse-power-hours being obtained from a gallon of ORDINARY lubricating oil (not a special or high priced brand).

Standard equipment for the Commercial and Special Electric type engines consists of Air Starting Equipment, Combination Water and Fuel Oil Circulating Pump, Exhaust Flange, Vertical Nipple and Elbow, Wrenches, Lubricators and small fittings. Friction Clutch Pulleys of proper size to transmit engine rated Horse Power included with Commercial type engines.

Descriptive Bulletin No. 9-U Sent Upon Request.

IRONS, Sad, Plain (Continued)

Modern Safety Gas Iron Co., 205 Cuthbert, Philadelphia, Pa.
National Stamping & Electric Wks., 3213 W. Lake, Chicago, Ill.
Peerless—See Tures Mfg. Co.
Phillips & Buttorff Mfg. Co., Nashville, Tenn.
Sensible—See Colebrookdale Iron Co.
Solar Light Co., 62 Wooster, New York, N. Y.
So. Crescent—See Southern Skein & Foundry Co.
Southern Skein & Foundry Co., Chattanooga, Tenn. "So. Crescent"
Star—See Enterprise Mfg. Co. of Pa.
Starr—See Howell (W. H.) Co.
Strauss Gas Iron Co., 1426 Vine, Philadelphia, Pa. "Iwanta"
Sunshine-Jasper Co., 53 E. 8th, New York, N. Y.
Superior—See Colebrookdale Iron Co.
Tures Mfg. Co., 324 6th, Milwaukee, Wis. "Peerless," "Turs-Lite"
Turs-Lite—See Tures Mfg. Co.
Union Mfg. Co., Boyertown, Pa.
Vulcan—See Crane (Wm. M.) Co.
Wapak Hollow Ware Co., Wapakoneta, O.
Williams (A. C.) Co., Ravenna, O.

IRONS, Sash Cord

Connecticut Cord Iron Corp., Norwich, Conn.
Peck, Stow & Wilcox Co., Southington, Conn. "Pexto"
Pexto—See Peck, Stow & Wilcox Co.
Sargent & Co., New Haven, Conn.
Wickwire Spencer Steel Corp., 41 E. 42d, New York, N. Y.

IRONS, Soldering—See also Coppers, Soldering

IRONS, Soldering, Electric

(See also Coppers, Soldering)
American Beauty—See American Electrical Heater Co.
American Electrical Heater Co., 1865 Woodward Market, Detroit, Mich. "American Beauty."
B-D—See Bleadon-Dun Co.
Raco Electric Co., Bode 1s.
Bleadon-Dun Co., 213 S. Peoria, Chicago, Ill. "B-D"
Brach (L. J.) Mfg. Co., 129 Sussex Av., Newark, N. J.
Clemens Electrical Corp., 726 Main, Buffalo, N. Y.
Cook Electric Co., 2700 Southport Av., Chicago, Ill.
Cook (Frank B.) Co., 326 W. Madison, Chicago, Ill.
Cutler-Hammer Mfg. Co., 880 St. Paul Av., Milwaukee, Wis.
Dover Mfg. Co., Dover, O.
Electrahot Appliances, 897 5th Av. S., Minneapolis, Minn.
Electric Heat Unit Co., St. Louis, Mo. "Solderette"
General Electric Co., Schenectady, N. Y.
Hartford Instrument Co., 806 Pearl, Hartford, Conn.
Landers, Frary & Clark, New Britain, Conn. "Universal"
Metro Electrical Co., 67 Globe, Newark, N. J.
Post Electric Co., 30 E. 42d, New York, N. Y.
Rock Island Mfg. Co., Rock Island, Ill.
Simplex Electric Heating Co., Boston, Mass.
Solderette—See Electric Heat Unit Co.
Strauss & Blum, 254 W. 41st, New York, N. Y.
Universal—See Landers, Frary & Clark
Vulcan Electric Heating Co., 107 W. 13th, New York, N. Y.
Waage Electric Co., 5100 Ravenswood Av. N. W., Chicago, Ill.

IRONS, Waffle

Aladdin—See Landers, Frary & Clark
Aluminum Cooking Utensil Co., New Kensington, Pa. "Wear-Ever"
American—See Griswold Mfg. Co.
Atlanta Stove Wks., Atlanta, Ga.
Birmingham Stove & Range Co., Birmingham, Ala.
Crane (Wm. M.) Co., 18 E. 41st, New York, N. Y.
Fanner Mfg. Co., Brookside Pk., Cleveland, O.
Florence Stove Co., Gardner, Mass.
Freidag Mfg. Co., Freeport, Ill.
Griswold Mfg. Co., Erie, Pa. "American"
Landers, Frary & Clark, New Britain, Conn. "Aladdin"
Mirro—See Aluminum Goods Mfg. Co.
New England Novelty Wks., Hill, N. H.
Phillips & Buttorff Mfg. Co., Nashville, Tenn.
Reading Hdw. Co., Reading, Pa.
Stover Mfg. & Engine Co., Freeport, Ill.
Stuart & Peterson Co., Burlington, N. J.
Van (John) Range Co., 5th & Broadway, Cincinnati, O.
Viko—See Aluminum Goods Mfg. Co.
Wagner Mfg. Co., Sidney, O.
Wapak Hollow Ware Co., Wapakoneta, O.
Wear-Ever—See Aluminum Cooking Utensil Co.
Wrightsville Hdw. Co., Wrightsville, Pa.

IRONS, Waffle, Electric

Bersted Mfg. Co., 771 Mather, Chicago, Ill.
Duparquet, Huot & Moneuse Co., 110 W. 42d, New York, N. Y.

This Royal Iron

Is the Ideal Iron for Home Use

Sells Easily
Gives Satisfaction

Over One Million in Use

Has an always cool handle. Heat regulated instantly. Attractive Window Trims, Counter Displays, Movie Slides, Electros and Circulars Free with first order.

Royal Self-Heating Iron Co.
Big Prairie, Ohio

THE Royal Self Heating Iron

Fitzgerald Mfg. Co., Torrington, Conn. "Star-Rite"
Landers, Frary & Clark, New Britain, Conn. "Universal"
Star-Rite—See Fitzgerald Mfg. Co.
Universal—See Landers, Frary & Clark

IRONS, Waffle, Toy

Freidag Mfg. Co., Freeport, Ill.
Stover Mfg. & Engine Co., Freeport, Ill.
Wagner Mfg. Co., Sidney, O.

ISINGLASS—See Mica

ISOLATED LIGHTING PLANTS—See Lighting Plants, Farm, Electric

JACKETS, Fishing—See Jackets, Hunting and Fishing

JACKETS, Hunting and Fishing

Drybak—See Weed (Lewis M.) Co.
Gem Shirt Co., Dayton, O.
Liederman Bros. & Soboroff Co., 2432 McLean Av., Chicago, Ill.
Weed (Lewis M.) Co., Binghamton "Drybak"

JACKETS, Milk Can

B. & W.—See Burrell (D. H.) & Co.
Burrell (D. H.) & Co., Little Falls, N. Y. "B. & W."
Oakes & Burger Co., Cattaraugus, N. Y.

JACK CHAIN—See Chain, Jack

JACK KNIVES—See Knives, Pocket

JACK PLANES—See Planes

JACK SCREWS—See Screws, Jack

JACKS, Automobile

(See also Jacks, Carriage and Wagon)

A. P. C.—See Ashland Products Co.
Acme—See Spencer's (I. S.) Sons

The Standard Scale and Supply Corporation

PITTSBURGH, PA., 1631 LIBERTY AVENUE

NEW YORK 145 Chambers St. | PHILADELPHIA 523 Arch St. | CHICAGO 163-171 N. May St. | CLEVELAND 721 St. Clair Ave., N.E.

Manufacturers of

Scales and Concrete Mixers

Products

Scales; Concrete Mixers; Engines, gas, gasoline and oil; Hoists; Coal Dealers' Supplies; Contractors' Equipment.

"The Standard" Modern Railroad Track Scale

Manufactured in capacities of from 6 to 300 tons and lengths of platforms running from 6 ft. up. On account of the arrangement of tipples it is frequently necessary to place two or more cars on the Scale platform at the same time. We are prepared to furnish a specially heavy type where the Scale is called upon to perform particularly heavy duty, or where it is necessary for a locomotive to pass over it. With the lighter patterr a dead rail is usually provided. A single ful capacity beam, graduated from 20 lbs. up to th capacity of the Scale, either with or without Re cording Attachment, is usually furnished. Double Triple or special beams are frequently used anc we are prepared to meet all demands.

"The Standard" Mine and Tipple Scale

The illustration shows the type used for scales installed at a shaft bottom or in the tipple floor. It is made to accommodate one car of coal and in capacities from 4 to 10 tons. Tracks are laid on the platform to suit requirements. Can be equipped with our Automatic Quick Weighing Outfit.

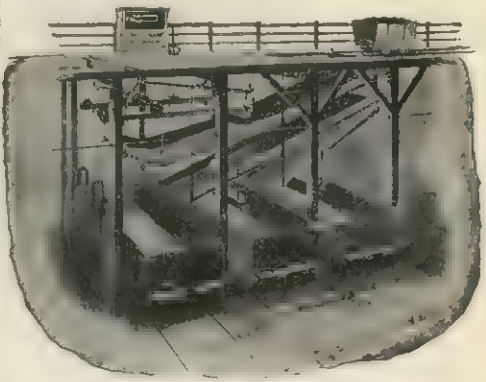
The beam is graduated 500 x 2 pounds on each bar for mine and tipple service, 250 x 1 pound on upper and 500 x 2 pounds on lower bar for warehouses, when so ordered. A beam graduated 1000 x 2½ pounds or 2000 x 5 pounds will be furnished at an extra price.

Weights, 6 to 10 tons, 2 pounds per ton; others, 4 pounds per ton.

All scales are exclusive of lumber and foundation which are to be furnished by the purchaser.

Capacity Tons	Platform Size	Edge of Platform to Beam Rod
4	6 x 3 ft 10 in	1 ft. 1⅞ in.
4	6 x 4 ft. 11¼ in.	1 ft. 6¾ in.
6	6 x 4 ft. 11¼ in.	1 ft. 6¾ in.
6	8 x 6 ft. 0⅝ in.	1 ft. 6¼ in.
6	9 x 6 ft. 11 in.	2 ft. 7½ in.
10	6 x 4 ft 11¼ in.	1 ft. 6¾ in.
10	8 x 6 ft. 0⅝ in	1 ft. 6¼ in.

Larger sizes and capacities are special.



"The Standard" Suspension Tipple Scale

for weighing coal after being dumped in the pans. Capacities 4 to 10 tons regular, although larger capacities are furnished when specified. The beams furnished are the same as furnished with the Mine and Tipple type. Extensions to locate the beam at any distance desired, and either above or below the mechanism, can be furnished.

Streeter-Amet Weighing & Recording Co.

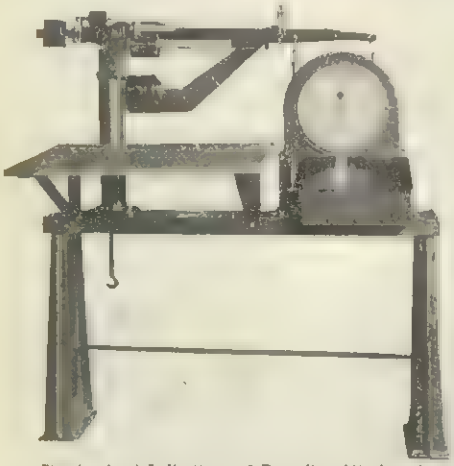
4101-05 Ravenwood Ave., Chicago, Ill.

Manufacturers of

Weight Recording Attachments

For Mine Tipple Scales and Railroad Track Scales

The Streeter-Amet Weight Recording Attachment for mine scales automatically prints the weight of every load on a paper tape which is instantly visible to the weighman. When cars are



Streeter-Amet Indicating and Recording Attachment

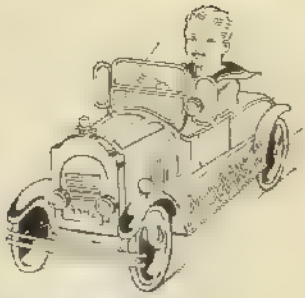
weighed as they pass over the scale platform either coupled together or one at a time by gravity (and without stopping thereon) the entire weighing operation becomes automatic by means of mechanical appliances which operate the printing mechanism at the proper moment. When commodity is weighed in hopper or weigh-basket, the recorder comes to balance immediately after the load is deposited and the weight is recorded on the paper tape by stepping on a foot pedal, or by pulling a hand lever, both of which instantly operate the printing mechanism. This device, in addition to indelibly recording the weight of each load, indicates the weight on a dial.

The Dial and Recording attachment pictured on this page includes all equipment above the scale shackle, such as beam shelf and beam shelf supports, beam stand and beam and a large writing table conveniently located. The recording mechanism is connected to the nose or end of scale beam. The upward movement of the beam, when load is upon the scale, rotates the recording wheel until the numerical indication upon the wheel, corresponding to the weight of the load, is at the lowest point directly above the printing hammer, and in line with the indicator. The printing hammer is then released (actuated either automatically by the flange of the car wheel operating a trip lever on the scale platform or manually where commodity is weighed in hopper or basket) and the weight is recorded. As soon as the printing hammer releases the tape automatically moves forward so that the weight is instantly visible. Three weights are always visible at one time, so that the weighmaster may check back if necessary. The tape then turns downward over a roller into a casing and is wound into a compact roll, convenient for reference. The Dial Pointer is rigidly mounted on the same shaft supporting the wheel, thereby assuring the same weight indication on the dial as is recorded on the paper tape.

The Indicating and Recording attachment was designed for the purpose of supplying the coal mining industry with an accurate, impartial weighing medium that would minimize disputes regarding correct weights, that would stand up under the terrific strain of tipple operation and that would increase tipple capacity due to the rapidity of the weighing operations. That these results are attained is attested by hundreds of installations giving satisfactory service to all parties concerned. The device is dependent for the accuracy of its work only on uniformly exact operation of carefully made mechanism and not on the uncertain human element.

The recorders can be attached to any make of scale, provided capacity and design are suited for the work to be done.

The construction and operation of this attachment is fully described in our Bulletin No. 7 which will be gladly forwarded upon request. If you have a special weighing problem we offer you the counsel of our engineering experts, and the benefit of our thirty-four years' experience along these lines is at your service.



Why

The Toledo BLUE STREAK Super-Quality Line

Leads the Parade

The Modern youngster is just as particular about his "car" as are his parents. He not only wants "class," but he wants all the accessories and attachments which go to make "a complete job." His desire is easily satisfied with the Toledo Blue Streak Line. Never before has there been such an array of special features to "take the eye" of both youngsters and parents. A few are shown at the right, but there are many more.

Then there are the exclusive features—the No-Dead-Center-Gear and the Adjustable Rubber Pedals—which distinguish the Toledo Blue Streak Line from all others. And all these explain "why" the Toledo Blue Streak Line "Leads the Parade" so easily wherever juvenile vehicles are found.

Ask the **BLUE STREAK** Salesman or Your Jobber for full particulars, price, etc.—or write us for catalogue on this Super-Quality Line of Juvenile Vehicles.

Look

for the Toledo Blue Streak Line at the April Toy Fair, Morrison Hotel, Chicago

TOLEDO BLUE STREAK LINE

The TOLEDO METAL WHEEL CO.
TOLEDO, OHIO

Makers of Dependable Wheel Goods Since 1887

LUBRICANTS

3-in-1.

3-in-1 oil in 3½-ounce can with handy spout. A closed screw cap is soldered on the side of the spout for use when it is desired to close the can tightly. Can is 3½ inches high, 2½ inches wide and ⅝ inch thick. Very handy to carry in pocket; especially adapted for hunters, sportsmen, mechanics, machinists, etc

No. 35—Can with handy spout. Per dozen $4.00

No. 32 -Small bottles, 3-in-1 oil. Per dozen.....$1.80
Two dozen in a wooden box.

No. 33 3-ounce bottles 3-in-1 oil. Per dozen.... 3.60

No. 34—8-ounce bottles 3-in-1 oil. Per dozen..... 8.00
One dozen in a wooden box

No. 244—Marble's Nitro-Solvent Oil, for removing residue of all nitro and other powders, 2-ounce bottles. Per dozen.....$3.60

Marble's Nitro-Solvent Oil.

Quickly dissolves the residue of all black and smokeless powders, including Cordite, neutralizing the acids before, or even after they penetrate the steel. Contains no acid and will not congeal. If applied soon after shooting, the arm can be left several days without wiping and be in perfect condition when cleaned. Best rust remover made. Cleans and polishes rapidly. A perfect lubricant.

No. 544—Six ounce can. Weight, per dozen, 6 pounds. Per can. $0.60
Three dozen in case. Weight, 20 pounds.

Nyoil.

Graphophones, phonographs, talking machines and typewriters are a high class of delicate machinery, and require most careful attention to bring out their finest tone and insure accuracy in their working.

To this end one of the most essential points of care is the oiling, and only the very finest should be used.

For fifty years the house of William F. Nye, of New Bedford, Mass., has been the leader in the manufacture of oils for watches, clocks, and extremely delicate machinery.

Any user of a phonograph has but to step into his local jeweler or watch repairer to find a bottle of Nye's oil, and the same careful study and adaptation has been given to Nyoil for use on phonographs, talking machines and Graphophones.

No. 4-1—One ounce bottle; weight, per dozen, 2 pounds. Per dozen $2.00

No. 4-2—Three ounce bottle; weight, per dozen, 5 pounds. Per dozen 3.50

No. 4-3½—Three and one-half ounce can; weight, per dozen, 5 pounds. Per dozen..... 3.50

LUBRICATING OIL

Signet.

This is a specially compounded mineral oil for the finest lubricating purposes. It is light in color has a pleasing odor, and is a perfect lubricant for typewriters, billing and adding machines, and all sorts of machinery. It is indispensable for home, office or factory use.

No. 250—Small bottle; weight, per case, 47 pounds. Per gross.....$14.40
2 dozen in a package; 12 dozen in a case

NITRO POWDER SOLVENT

Hoppe's Nitro Powder Solvent.

Nitro powder solvent makes rifle cleaning easy and will thoroughly remove the residue of any high power powder now on the market, including black powder. No. 9 is a positive rust remover and will not attack or rust the barrel. It will prevent rusting in any climate and must be left in the barrel after cleaning. This will neutralize any residue, loosen metal fouling or leading that may be left in the barrel after cleaning.

Nitro Solvent No. 9.

It will eliminate the use of the brass brush in rifles (especially sporting rifles), which is more or less destructive to accuracy, and should be used immediately after the day's shooting. Try it for cleaning .22 caliber rifles and you will use no other. It will dissolve leading. For cleaning the revolver and keeping it in good condition it has no equal.

No. 9—Weight, per dozen, 3½ pounds.....$6 00
Packed 12 in a box

WINCHESTER LUBRICANTS

GUN OIL

Winchester

Winchester gun oil is specially prepared by the Winchester laboratories for lubricating the lock mechanism of fire arms. It is an oil preparation containing no harmful ingredients. No acid, no alkali and absolutely no grease are used in its manufacture. It never dries out, gums or cakes. It will not become rancid in hot weather, nor thicken in extreme cold.

Winchester gun oil is an ideal lubricant of medium thickness and is especially made for oiling and preserving the metal parts of all rifles, shotguns and revolvers.

Size package	1 oz. bottle	3½ oz. can
Per dozen	$1.80	$3.60

GENERAL UTILITY OIL

Winchester.

Winchester general utility oil is a light, clean, odorless, pure mineral oil, utterly without the greasy smell so noticeable in most lubricating oils. It oils and improves everything that needs lubrication, protection or cleaning, regardless of climate or condition of weather. It does not gum, become rancid or dry out. It contains neither grease nor acid and collects no dirt.

Sportsmen, motorists, bicyclists, mechanics, toolmakers, jewelers, manufacturers—people in all walks of life, need this oil daily, and after a trial wonder how they ever got along without it. Electricians and users of high speed machinery prefer it to all other oils because it does not heat up or smoke, quickly penetrates to all bearings, and reduces friction to the minimum.

It prevents rust on all metal surfaces in any climate. Especially valuable near salt water where all metals tend to rust or tarnish. A few drops on a cloth rubbed lightly over metal window and door screens greatly prolongs their life. Winchester General Utility Oil penetrates the pores of the metal and forms a protection against dampness and moisture.

Size package	1 oz. bottle	3½ oz. can
Per dozen	$1.80	$3.60

CRYSTAL CLEANER

Winchester.

For removing fouling from gun barrels.

This preparation completely removes all fouling from the inside of a gun barrel without injuring it in any way.

After shooting, clean gun barrel thoroughly by applying freely with vigorous and repeated rubbing until coloration disappears. Then wipe dry and apply Winchester gun grease. This will prevent rust. Winchester crystal cleaner should always smell strongly of ammonia. Prepared in the Winchester laboratories.

Size package	3¼ oz. bottles
Per dozen	$3.00

RUST REMOVER

Winchester.

Will remove rust from the most delicate metallic surface without injury. Use for gun bores, metallic instruments, skates, golf clubs, shears, knives, tools, etc.

To remove rust from gun bores apply with rag on end of wiping rod. Rub vigorously until rust disappears.

For other articles apply on cloth and rub vigorously.

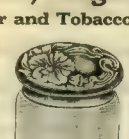
Prepared in the Winchester laboratories.

Size package	Collapsible Tubes
Per dozen	$3.00

Cigar Jars, Cigarette Boxes, Humidors

Cigar and Tobacco Jars

Cigar Jar, made of a good heavy glass, star cut bottom nickel plated metal cover neatly decorated with match holder. A wonderful value. Packed one in a box.
No. 24A22.
Doz. 5.50 | Each .50



Tobacco Jar, made of a good quality opal glass with gold plated floral embossed cover. Odd shaped Can also be used for cigar jar. 5½ in. high. Packed one in a box.
No. 200A33.
Doz. 7.00 | Each .60

Cigar Jar, heavy cut glass pattern. Colonial design, highly polished nickel plated cover with raised top. Packed one in a box.
No. 24A30.
Doz. 9.00 | Each .80

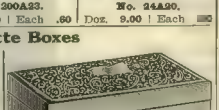
Cigarette Jars

Cigarette Jar. 5¾ inches high, removable ash tray with match and cigarette holder. Colored glass lining. Nickel plated. Each in a box.
No. 24A16. Each..... 1.25

Cigar Jar, as above, only larger to hold cigars. 7¾ inches high.
No. 24A17. Each..... 2.00

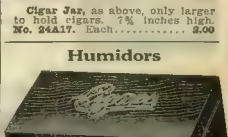
Cigarette Boxes

Cigarette Box. A most attractive case made of composition white metal, pure oxidized silver plated with highly embossed figured design on cover. Cedar wood lined, will hold about 50 cigarettes. 5½ inches long, 4 inches wide. Packed one in a box.
No. 25A21. Each..... 3.00

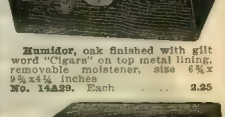


Cigarette Box. The Royal Blue silver effect two tone finish case. Made of composition white metal, pure oxidized silver plated. Has two cedar wood lined compartments to hold 100 cigarettes. Length 6½ inches, width 4⅜ inches.
No. 25A22. Each..... 3.50

Humidors



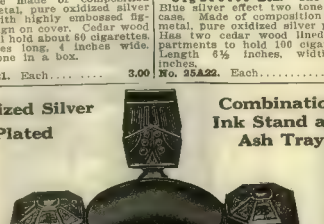
Humidor, oak finished with gilt word "Cigars" on top metal lining, removable moistener, size 6⅝ x 9⅜ x4¼ inches
No. 14A29. Each..... 2.25



Humidor, mahogany finish, copper lining, removable moistener, lock and hinges are countersunk. Size 7¾ x11x4½ inches. Holds one box of cigars. Packed one in a box
No. 14A30. Each..... 4.50

Oxidized Silver Plated

Combination Ink Stand and Ash Tray



Combination Inkstand and Ash Tray with Matchbox Holder, made of composition white metal, pure oxidized silver plated, hand burnished and contains two glass inkwells and a glass receptacle for ashes. Size 9½ inches wide by 4¾ inches high. Packed one in a box.
No. 21A56. Each..... 3.50

Todd Oil Burner & Engineering Corporation

25 Broadway, NEW YORK CITY

Manufacturers of

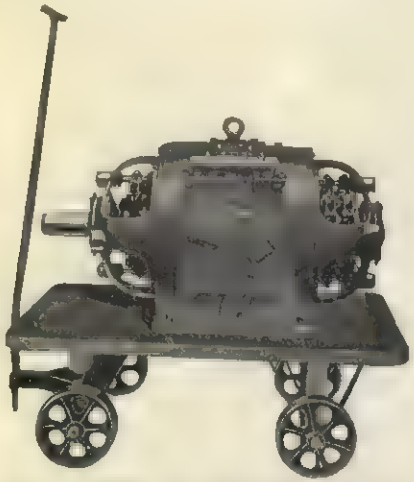
Todd Twin Pole Arc Welders

Product

Twin Pole Arc Welders, D. C. type, A. C. or D. C. driven.

Service

If welding requirements are sent to us we will be very glad to quote on a welding unit that will meet the needs in either portable or stationary types.



DR2-D C D C 200 Amp—Single Operator Portable

Length	36 inches	Net Weight	765 pounds
Width	24 inches	Shipping Weight	835 pounds
Height	12 inches		

Recommendations as to Uses

The following are a few of the many operations in which the Todd Twin Pole Arc Welder has shown its superiority:

Broken Shafts.
Broken Gears and Gear Teeth.
Broken Conveyors.
Broken Dumps and Shaker Screens.
Broken Housings.
Broken Tipple and Hoisting Machinery.

Through the use of the Todd Welder flat wheels may be **built up** and **machined down.**

Advantages

Todd Twin Pole Arc Welders are lighter, more compact, have greater accessibility than other electric welders. They are internally controlled thereby eliminating the need of a switchboard and are furnished in either stationary or portable types, operatable on either A. C. or D. C. current on a belt or by gasoline engine.

Welding costs are but a small fraction of replacement costs—proper welding makes a broken part as good as new.

Todd Twin Pole Arc Welders are insurance against mine shut-downs and cut the maintenance cost of supply houses in half.

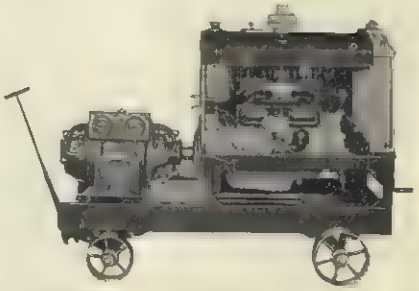
Todd Twin Pole Arc Welding is less than half as costly as acetylene welding.

Todd Twin Pole Arc Welders are inherently regulated and free from external regulating devices such as switchboards, etc. They are sturdy in construction and may be driven from any available source of power and can be used independently for either electric power or electric illumination.

Todd Twin Pole Arc Welders will lower your mining costs.

Guarantee

The Todd Twin Pole Arc Welder is guaranteed for a period of twelve months against defective material and workmanship in manufacture. All parts proving defective within this time will be furnished free of cost.



ER—1200 R P M —150 Amp —Single Operator Gasoline Drive

Length	74 inches	Net Weight	2475 pounds
Width	39 inches	Shipping Weight	2775 pounds
Height	60 inches		

Todd Twin Pole Arc Welders are in use in many of the most important industrial plants in the United States including the yards of the Todd Shipyards Corporation.

Buy Now for Christmas

Prepare for a bigger holiday season this year by stocking this profitable line of juvenile and baby vehicles.

The Toledo BLUE STREAK Super-Quality Line

has two patented and exclusive features that make an instant appeal to parents and mean money in the dealer's pocket.

No-dead-center Gear

gives easy pedal action and prevents wheels becoming locked on dead center.

Adjustable Rubber Pedals

permit the adjustment of pedals to fit the growing child.

Ask the BLUE STREAK sales man or your jobber for full particulars and prices or write us for catalog on this Super Quality Line of Juvenile Vehicles.

Juvenile Automobiles · Tricycles
Coaster Wagons · Scooters
Velocipedes · Pedal Cars
[illegible] · Hand Carts

TOLEDO BLUE STREAK LINE

The TOLEDO METAL WHEEL CO.
TOLEDO, OHIO

Makers of Dependable Wheel Goods Since 1887

Hygrade Lamps
in a High Grade Store

The splendid store of Frank Parrish & Son, Hamilton, Mo., plus the persistent high quality of the lamps themselves, have made Hygrade lamps popular in Hamilton, Mo.

Hamilton's White Way is bright with Hygrade lamps. Its store windows catch the purchaser's eye with Hygrade lamps. Its churches and homes enjoy the soft radiance of Hygrade lamps.

Hygrade Lamps

You cannot buy a better lamp

HYGRADE LAMP CO. SALEM, MASS.

PULL TOYS, TINKER TOYS, MISCELLANEOUS

Daddy Duck. One of the nicest pull toys ever turned out. A cute little Duckie size 10x8 inches, made of 1¼ inch wood, covered with high gloss enamel, yellow body and red wings and cap. Black hardwood wheels. String attached for pulling. Each in box.
No. 39N100. Per dozen **4.25**

Bunny. A most attractive wood pull toy. Beautiful high gloss enamel finish, in the daintiest, most appealing white and pink. Size 10x7 inches. Made of 1¼ inch thickness wood. Hardwood black wheels. Pull string included. Each in box
No. 39N101. Per dozen . . **4.25**

TOM TINKER

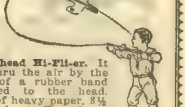
No baby's happiness is quite complete without Tom Tinker, the ideal companion. To the eye Tom presents a front most amazing. Seemingly all the bright colors in the world are gathered into this little man's body. Perhaps that's why the babies insist on his company. And then he is so comfortable Made entirely of round balls. No sharp corners or edges to hurt soft hands. The colors do not lick off or suck off, or bite off. They are absolutely fast, and are, furthermore, covered with a coating of elastic celluloid shellac. Each in box, size 3¼x2½x2½ inches
No. 39N104. Per dozen **4.65**

Tinkertoy. The wonder builder, made entirely of hard wooden spools and rods from which can be constructed merry-go-rounds, swings, windmills, airships, towers, bridges, furniture, animals and a thousand and one things. Each complete set in metal end, screw top container.
No. 39N105. Per dozen . . . **5.75**

SCISSOR TOY

Scissor Toy. A clever novelty, made of wood, size closed 4 inches, extends to 24 inches, with assorted colored feathers on extreme end. Two dozen in box.
No. 2N422.
Per gross. **2.75** | Per dozen.. **.25**

BLUEHEAD FLYER



Bluehead Hi-Fli-er. It flies thru the air by the force of a rubber band attached to the head. Made of heavy paper, 8½ inches long. Two dozen in box
No. 38N50.
Per gross. **3.00** Per dozen.. **.27**

Wild West Pistol and Target

A combination game and shooting gallery A big winner at the price. A double combination target, 13½ inches long, 4⅝ inches high and 3¼ inches deep. Made of metal brightly enameled in colors, front screen decorated with animals, embossed around central 3½ inch target with nickeled bell in center. Rear screen supports 5 numbered targets which fall back when hit. The pistol is black enameled steel and operates with a spring which projects a wooden ball very accurately for several feet. Each set complete in handsome display box die cut to represent circus cage
No. 50N36. Per dozen sets..... **3.75**

IT ROLLS UP HILL

"Cum Back," is an interesting novelty that defies the laws of gravitation; cylinder shape, 2½x2½ in., with roll rim metal cap ends, covered with ornate paper. Roll it on the floor or down the hill and it will come back to you. This is accounted for by the peculiarly poised metal ballast inside. One dozen in box.
No. 2N25.
Per gross. **7.50** | Per dozen.. **.65**

19½-INCH TOY WOOD VIOLIN

Made in Europe. 19½ inches long. Good resonant wood used. Bulge back and front. Complete with 3 catgut and one steel string. 17 inch adjustable horsehair bow. Each complete.
No. 39N47. Per dozen..... **7.50**

SHURE WINNER
THE BEST

REAL MOTOR BOAT

OTHER DANDY TOYS

NEW Telephone Low Price

Flaphone 500. Perfect representation of a real desk telephone. Highly nickel plated base and bell. The bell rings when receiver is lifted from hook. Adjustable transmitter. Black enameled receiver and transmitter. Each in individual carton.

No. 39N26. Per dozen..... 4.00

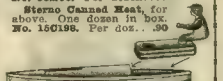
Chug Motor Boat

Tremendous Sensation. Runs half an hour without attention. **No spring,** but a combination of water and heat. Length 9 inches. Enameled in colors. It uses Sterno Heat. Extremely simple. No danger, as steam is not generated. Actually runs half an hour, using a small amount of Sterno. Display it in a tub of water and draw a crowd. Sounds just like a motor boat. Packed each in box. Sterno not included.

No. 39N86. Per dozen.... 1.00

Sterno Canned Heat, for above. One dozen in box.

No. 15C196. Per doz.. .90



Roaming Mouse

Enameled, full size metal roaming Mice. Lead wheel suspended on fresh rubber. Three dozen in package.

No. 39N79. Domestic.	**No. 39N68. Imported.**
Per gross. **3.50**	Per gross. **2.50**

Toy Sewing Machines

The Kind That Sew

Toy Sewing Machine. Amusing and instructive. Made of metal, nicely finished, with nickel plated trimmings. Each machine tested and is ready for use, including thread and clamp. Can be fastened anywhere. Actual sewing can be done by any child, as the operation is simple Each in box, with full instructions.

No. 38N46.

Small Size, height 5¼ inches, width 4¼ inches.

Per dozen. **7.50** | Each..... .80

No. 38N42.

Medium Size, height 6⅛ inches, width 5¾ inches.

Per dozen **11.00** | Each..... **1.00**

No. 38N40.

Large Size, size about 6⅝x6¾ inches

Per dozen **21.00** | **1.85**

GarageWithTwo Autos

The Garage is made of metal, lithographed inside and out. Size 8¾x6½x4¾ in. high. Has floor, gable roof and swinging double doors that lock in center. Inside are packed a Limousine with seats and doors that open, also a touring car, each equipped with strong spring motor. Garage and 2 Autos packed each in carton.

No. 39N21. Per dozen..... **7.75**

Hess Friction Mouse

Just the size and color of a real mouse. Merely push on floor or carpet to release and the mouse runs over the floor in extremely lifelike manner. It certainly keeps the girls moving. Each in box. One dozen in carton.

No. 38N57.

Per gross **11.50** | Per dozen. **1.00**

Mechanical Mouse, length of body 2½ inches, the exact reproduction of a real mouse in size, shape and color Fitted with clock spring which forces the mouse to glide over floor. Each in box. One dozen in package.

No. 38N58.

Per gross **14.75** | Per dozen. **1.25**

Low Priced Mechanical Train. Consists of a 5½ inch engine with strong clockwork motor, tender and 2 handsomely lithographed vestibule cars, each 4½ inches long. 4 pieces of track, making a circle almost five feet in circumference. Each set packed complete in partitioned box with colored illustration on cover.

No. 39N70. Per dozen..... 8.50

Toy Mechanical Train. Consists of a 5½ inch cast iron engine with extra, long running clock work mechanism; 3½ inch tender, loaded with imitation coal, and two handsomely lithographed New York Central Vestibule passenger cars, each 4⅝ inches long. Also 8 pieces curved track to make a circle 7 feet in circumference. Packed each part separately wrapped and the complete set in partitioned cardboard box, with colored pictures on cover.

No. 39N71. Per dozen 17.50

SHURE WINNER
THE BEST

REAL MOTOR BOAT

OTHER DANDY TOYS

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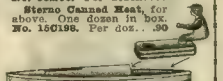

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PULL TOYS, TINKER TOYS, MISCELLANEOUS

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No. 39N100. Per dozen **4.25**

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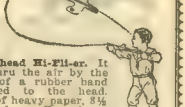
No. 39N104. Per dozen **4.65**

Tinkertoy. The wonder builder, made entirely of hard wooden spools and rods from which can be constructed merry-go-rounds, swings, windmills, airships, towers, bridges, furniture, animals and a thousand and one things. Each complete set in metal end, screw top container.
No. 39N105. Per dozen . . . **5.75**

SCISSOR TOY

Scissor Toy. A clever novelty, made of wood, size closed 4 inches, extends to 24 inches, with assorted colored feathers on extreme end. Two dozen in box.
No. 2N422.
Per gross. **2.75** | Per dozen.. **.25**

BLUEHEAD FLYER



Bluehead Hi-Fli-er. It flies thru the air by the force of a rubber band attached to the head. Made of heavy paper, 8½ inches long. Two dozen in box
No. 38N50.
Per gross. **3.00** Per dozen.. **.27**

Wild West Pistol and Target

A combination game and shooting gallery A big winner at the price. A double combination target, 13½ inches long, 4⅝ inches high and 3¼ inches deep. Made of metal brightly enameled in colors, front screen decorated with animals, embossed around central 3½ inch target with nickeled bell in center. Rear screen supports 5 numbered targets which fall back when hit. The pistol is black enameled steel and operates with a spring which projects a wooden ball very accurately for several feet. Each set complete in handsome display box die cut to represent circus cage
No. 50N36. Per dozen sets..... **3.75**

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No. 2N25.
Per gross. **7.50** | Per dozen.. **.65**

19½-INCH TOY WOOD VIOLIN

Made in Europe. 19½ inches long. Good resonant wood used. Bulge back and front. Complete with 3 catgut and one steel string. 17 inch adjustable horsehair bow. Each complete.
No. 39N47. Per dozen..... **7.50**

Wood and Metal Horns and Kazoos

WOODEN HORN

Wood Horn, striped red, white and blue. 5⅛ inches long. Very noisy brass reed. Six dozen in box.

No. 14N6.

Per gross. 3.50 | Per dozen.. .30

Wood Pipe Whistle. About 5¾ inches long. Hollow stem with loud squawker. Painted in colors. Two dozen in box.

No. 14N28.

Per gross. 4.00 | Per dozen.. .35

Fancy Wood Pipe Whistle with face painted on bowl. Gilt trimmed, enameled. Assorted colors. About 4¾ inches long. Loud squawker in stem. Two dozen in box.

No. 14N27.

Per gross. 4.00 | Per dozen.. .35

Fancy, bright colored Wood Pipe Whistle, about 4¾ inches long. Wood bowl, carved and painted to resemble a man. Loud squawker stem. 2 dozen in box.

No. 14N37.

Per gross. 4.00 | Per dozen.. .35

3-INCH FOG HORN

3 Inch Fog Horn. Pocket size, very neat, funnel shaped. Has ring handle. Nickeled. Highly polished. Loud, noisy squawk.

No. 14N122.

Per gross. 4.00 | Per dozen.. .35

Wood Barrel Whistle. Height about 2½ inches. Carved to resemble man's head protruding from barrel. Enameled in colors. Loud squawker. 3 dozen in box.

No. 14N34.

Gross..... 1.00

Dozen..... .35

Wood Whistle. About 3½ inches high. Carved in shape of man's head and shoulders. Enameled in bright colors. Loud squawker. 3 dozen in box.

No. 14N26.

Per gross..... 4.50

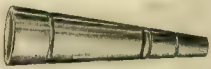
Per dozen..... .40

Handsomely Enameled and Gilt-trimmed Wood Figure Whistle. Carved in shape of a woman. Loud squawker. About 4¾ inches high.. 3 dozen in box.

No. 14N25.

Per gross..... 4.50

Per dozen..... .40



Handsome Nickel Plated Horns. Made of metal. Extremely fine finish. Pleasantly loud reed. A quick seller. Two popular sizes

3½ In. Long	5 Inches Long
1¼ inches diameter.	1¼ inches diameter.
No. 14N120.	**No. 14N121.**
Gross..... 4.75	Gross..... 9.00
Dozen..... .40	Dozen..... .77

ENJOY

Zoboy. Talk into it with a singing voice, you can imitate any instrument, or the bleating of animals, etc. Covered with plain paper, colors assorted, 6 in. long. ½ gross in box.

No. 13N55. Per gross..... .90

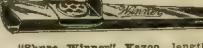
TROMBELLA

Trombella. This is a metal singing horn. Simply place against the lips and sing through it. This little instrument magnifies the voice and gives it a horn-like sound. Very fine for banquets, songfests, etc. ½ gross in box.

No. 13N4.

Per gross. 4.50 | Per dozen.. .40

"SHURE WINNER" KAZOO



"Shure Winner" Kazoo, length 4¾ inches, made of heavy stock sheet tin, with genuine skin vibrator. By placing the mouthpiece in the mouth you can sing, talk or hum into the kazoo with very amusing results. A very popular item. Three dozen in box.

No. 13N56.

Per gross. 4.25 | Per dozen.. .37

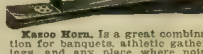
BUFFALO KAZOO

Buffalo Kazoo. The original and best patented skin vibrator. Length over all, 4⅝ inches. One dozen in box

No. 13N58.

Per gross. 4.75 | Per dozen.. .45

KAZOO BOSS



Kazoo Horn. Is a great combination for banquets, athletic gatherings, and any place where noise and singing are both desired. The horn is a very shapely affair. Hexagon shape. Very loud reed Singing through the Kazoo produces a very sweet musical sound. Length 5⅝ inches. Two dozen in box

No. 13N71.

Per gross. 6.50 | Per dozen.. .75

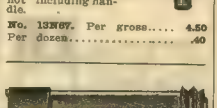
Wood Crickets and Noise Makers

Wooden Racket. Makes a big noise for a little fellow. Only 4½ inches long. Made of seasoned clear hardwood; in the center is a hardwood spring working over a toothed ratchet wheel. Natural wood finish. Clean goods. One dozen in package.
No. 13N62.
Per gross.. 4.00 | Per dozen.. .38

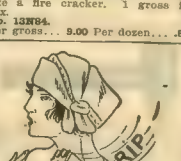
Hardwood Racket, reinforced in center to add stiffness to the drag; 6½ inches long, 2¾ inches wide, not including handle.
No. 13N67. Per gross..... 4.50
Per dozen..... .40

Red, White and Blue Wooden Safety Fire Cracker, 7 inches long, made of wood, and covered with Red, White and Blue Paper. Sounds like a fire cracker. 1 gross in box.
No. 13N84.
Per gross... 9.00 Per dozen... .80

Wooden Racket. American Made. Very Loud. 6½ inches long made of seasoned wood. In the center is a hardwood spring working over toothed ratchet wheel; trimmed in colors. Two dozen in box.
No. 13N65.
Per gross.. 4.75 | Per dozen.. .42

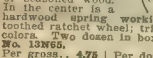


Wood Racket. Length 9¼ inches. Wood spring working on toothed ratchet. Trimmed in colors. Swing it around and you get all the noise you want. One dozen in a box.
No. 13N97.
Per gross... 8.25 Per dozen... .70



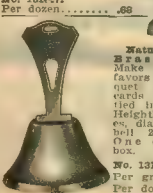
Ripper, made of wood; length 6 inches. Through the center is a wooden spring which works a toothed ratched wheel. Just run it down some ones back. Sounds like ripping cloth. ⅞ gross in packages.
No. 13N83. Per gross..... 1.20

Frog Crickets, Pan and Shovel Rattlers, Bells

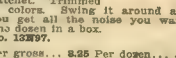


Metal Frog Cricket, very loud, top is exact shape of a frog, mounted on clock spring steel. Is durable and produces a loud telegraph key click. 1⅞ inches long. One gross in box.
No. 13N52. Per gross ..... .75

Tea Bell, 2½ inches diameter, full nickel plated. Black enameled wood handle. One dozen in box.
No. 13N47.
Per dozen..... .68



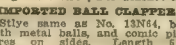
Natural color Brass Bell. Make beautiful favors at banquet. Place cards may be tied in handle. Heights 3 inches, diameter of bell 2 inches. One dozen in box.
No. 13N48.
Per gross. 7.75
Per dozen. .70



Carnival Ball Clapper, made of a hollow cylinder of wood, slotted with neat, turned handle. This gives it a xylophonic sound, a ball clapper attached on each side with spring produces a clatter very loud but pleasant. Two dozen in box.
No. 13N64.
Per gross.. 3.60 | Per dozen.. .36

IMPORTED BALL CLAPPER

Stlye same as No. 13N64, but with metal balls, and comic pictures on sides. Length 6½ inches. One-half gross in box.
No. 13N77.
Per gross.. 2.75 | Per dozen.. .25



Imported Tin Frying Pan Rattler, 6½ inches long.
No. 13N68.
Per gross.. 4.00 | Per dozen.. .35

Catbell. Copper finish; height 1 inch. Fine bell metal. A great item for masquerades, carnivals, etc. Diameter bottom 1 inch, height 1⅛ inch, shows full size. Three dozen in box.
No. 13N87.
Per gross.. 4.00 | Per dozen. .35

Sheep Bell, similar to above; height 1¾ in., width 1⅝ in. One dozen in box.
No. 13N42. Per dozen..... .65

Sheep Bell, height 2¼ inches. One dozen in box; weight, 2¾ pounds.
No. 13N43. Per dozen..... 1.75

Copper Finished Cowbell, height 4 inches; fine bell metal with heavy hammer. Produces a very loud, clear tone. For ball games, carnivals, etc. One dozen in box. Weight 9¾ lbs.
No. 13N44. Per dozen..... 2.75

TOPS

The Wonderful Gyroscope Top

Hurst Gyroscope Tops. A scientific top. Consists of disc cast wheel mounted on steel axle pivoted within a double ring, adjusted at each end with set screws so that it may run very evenly. May be set while in motion on the wooden pedestal, demonstrating two motions at one time. Each in box. The top we sell is the old reliable brand that all demonstrators like so well. One gross in case, one dozen in package.

No. 29N16. Per gross..... **16.00** Per dozen..... **1.35**

Dandy Gyroscope Top. All steel, brass color polished wheel with red striping. Each in box complete with pedestal and cord.

No. 29N14. Per gross..... **14.50** Per dozen..... **1.25**

MAGNETIC TOPS

Harry Toy Top. This is a top with magnetized spindle. With it comes an assortment of nine metal figures which when set against the top while spinning are caused to move about. Outfit is finished in black. Diameter of top 2 in. Figures range from 1 to 3 in.

No. 29N17.

Per gross.. **6.50** | Per dozen.. **.60**

Smaller Top. Black enameled. Heavily magnetized. Complete with four cutout figures in box.

No. 29N11.

Per gross.. **4.00** | Per dozen.. **.35**

UNCLE SAM TOP

Uncle Sam Top, made of hardwood, finished in U. S. flag colors. Top is fitted with wire catch which winds the spring in the bottom part and is released by pressing the knob in center; good spinner. 2 dozen in box.

No. 29N10.

Per gross..... **8.00**

Per dozen..... **.70**

SPINNING TOP

No. N2923.

Spin Top. Is made of metal with wooden handle, diameter 2 inches, complete with strong spiral wire spring, enclosed in a wooden handle which when released causes the top to spin a long time and makes a loud, singing sound. Beautifully finished in bright, enameled colors. One dozen in package.

No. 29N23.

Per gross... **9.00** Per dozen... **.80**

NEVER-STOP TOP

Never-Stop Humming Top. Made of metal striped in red, white and blue colors, enameled finish; wooden barrel top. Pressing center pin releases and sets top in motion. Operates with spring winder. One dozen in box.

No. 29N12.

Per dozen. **1.10**

WONDERFUL HUMMER

One of the largest and best tops on the market at anywhere near this price. 4 inches in diameter, extremely simple push button metal key winder. Hand striped red, white and blue. When spinning has a loud pleasant hum.

No. 29N20.

Per gross.. **10.50** | Per dozen.. **.90**

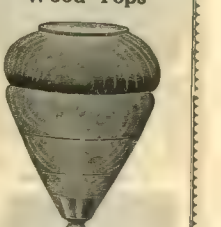
DIXIE DANCING TOP

Dixie Dancing Humming Top. All metal in bright colors. Top hops about when spinning. Spring metal wind which insures maximum speed. Very attractive. Diameter 3½ inches. One dozen in box.

No. 29N15.

Per gross.. **14.00** Per dozen.. **1.20**

Wood Tops



Ball Point Spindle Wood Tops, made of extra selected hardwood nicely turned and stained assorted bright colors. Long nickel plated ball point spindle set well into top. Strings not furnished. Illustration shows No. 29N35 which has a special gold stripe and is varnished. Balances are plain and without groove.

No.	Size	Packed	Gr.	Dz.
29N45.	1¼x2 in.	1 gr.		.90
29N40.	1½x2¼ in.	1 gr.		3.00
29N38.	1⅝x2⅜ in.	½ gr.	3.00	.27
29N35.	1⅞x2½ in.	½ gr.	4.00	.35

Top Strings, 6½ feet long, with buttonhole, white and blue color.

No. 29N33. Per gross..... **.85**

TIMERS

ANCO

Starts 'Em Quicker! Runs 'Em Slicker!
For Ford Cars and Fordson Tractors

This timer is of the "wipe contact" type. Its extreme simplicity and sturdy construction, as well as the obvious advantages of its unique design, have won for it the good will of its users. The higher electrical efficiency gives easier starting, smoother, stronger power and a healthier engine—for less gasoline.

It prevents electrical leakage by preventing metallization between contacts and maintains full electrical efficiency and maximum engine power and economy.

Each

No. FU—Complete, weight each about ½ lb. $2.50

Ten in a carton.

AD-VR-TI-ZR

For Ford Cars and Fordson Tractors

Designed exactly like the Anco, but less durable materials are used in the wearing parts.

It will give the user, while it lasts, exactly the same easier starting, stronger power, freedom from oiling and saving of gasoline

Each

Ad-vr-ti-zr—Complete, weight each about ½ lb. $1.00

Ten in a carton.

RED LINE

For Ford Cars, Trucks and Fordson Tractors

This timer embodies many refinements not found in the original Ford product, foremost of which is the patented raceway which is guaranteed to wear smooth and develop no ridges

The brush assembly has a hardened roller which is ground on a centerless grinder and assembled on a hardened bushing which construction is superior.

Each

Red Line—Complete, weight each about ½ lb. $0.75

One in a box.

HORN BUTTONS

JUMBO

For Ford and Dodge Cars

To be mounted on the steering post in place of the cap nut on the cars.

The shell cannot cut or damage the cable which is held securely in position by a heavy fibre arm. This fibre arm also receives all the strain and prevents the cable from being torn out from the terminals. Insulating washers are made of high grade fibre.

Sufficient cable of good quality is furnished to make a simple and quick installation possible and to allow ample movement in the steering wheel.

Assorted colors, packed on a display card.

Each

No. JFB—Assorted $0.75

Ten on a card.

AUTOMOBILE HORNS

TROJAN

Fitted with an instantaneous and positive motor and has a tone of heavy timbre and great volume. Circular field ring provides stronger mechanical construction and holds bearings in positive alignment.

Eleven slot armature, eleven bar commutator, which means highest efficiency. Unique and simple adjustment.

Each

No. E—13 in. long, 6 volts, black enameled, complete with bracket, weight each 5 lbs. $7.00

One in a box.

Quick acting motor, seven slot armature, seven bar commutator, special tempered steel diaphragm

Construction embodies the circular field ring, special oiling devices for front and rear bearings, unique and positive adjustment

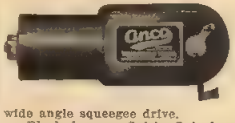
Each

No. D—5 in. diaphragm, 6 volts, black enameled, complete with bracket, weight each 4½ lbs. $5.00

One in a box.

WINDSHIELD WIPERS

ANCO SUPER-ELECTRIC



The engine uses in combination of a powerful Solenoid coil of advanced design, new type, full stroke, make and break speed control, novel spiral spring piston suspension, a pair of silent relay clutches and a wide angle squeegee drive.

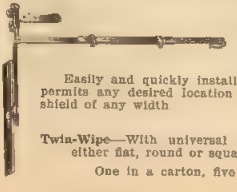
Black lacquer finish, 7 inch extra heavy special rubber squeegee blade, readily adjustable to height.

Each

No. TSU—For 6 volt battery $6.50

One in a carton.

ANCO TWIN-WIPE



Fits all cars and any automatic windshield wiper and most hand wipers. Any good automatic wiper will pull it readily.

Easily and quickly installed. Adjustable cross bar permits any desired location of double wipe on windshield of any width

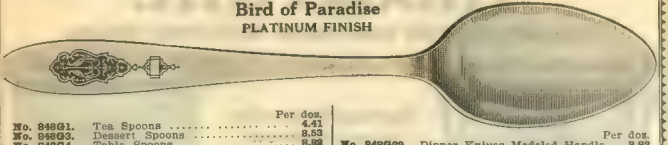
Each

Twin-Wipe—With universal clamp to fasten to either flat, round or square wiper arm.....$1.50

One in a carton, five in a display box.

COMMUNITY PLATE Guaranteed for 50 Years

Bird of Paradise
PLATINUM FINISH



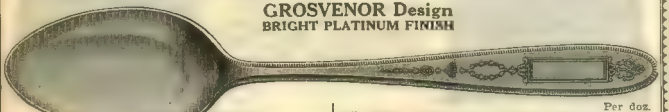
		Per doz.
No. 848G1.	Tea Spoons	4.41
No. 848G3.	Dessert Spoons	8.53
No. 848G4.	Table Spoons	8.82
No. 848G5.	Soup Spoons	8.82
No. 848G9.	Dessert Forks Flat Handle	8.53
No. 848G14.	Medium Forks Flat Handle	8.82
No. 848G15.	Medium Forks Hollow Handle	13.23
No. 848G28.	Dessert Knives Modeled Handle	8.66
No. 848G21.	Dessert Knives Hollow Handle	12.98

		Per doz.
No. 848G29.	Dinner Knives Modeled Handle	8.82
No. 848G26.	Dinner Knives Hollow Handle	13.23

STAINLESS KNIVES

No. 848G22.	Dessert Knives Hollow Handle	14.07
No. 848G30.	Dinner Knives Modeled Handle	10.09
No. 848G27.	Dinner Knives Hollow Handle	14.45

GROSVENOR Design
BRIGHT PLATINUM FINISH



		Per doz.
No. 846G1.	Tea Spoons	4.41
No. 846G3.	Dessert Spoons	8.53
No. 846G4.	Table Spoons	8.82
No. 846G5.	Soup Spoons	8.82
No. 846G8.	Dessert Forks Flat Handle	8.53
No. 846G14.	Medium Forks Flat Handle	8.82

		Per doz.
oN. 846G15.	Medium Forks Hollow Handle	13.23
No. 846G28.	Dessert Knives Modeled Handle	8.66
No. 846G21.	Dessert Knives Hollow Handle	12.98
No. 846G29.	Dinner Knives Modeled Handle	8.82
No. 846G26.	Dinner Knives Hollow Handle	13.23

STAINLESS KNIVES

No. 846G22.	Dessert Knives Hollow Handle	14.07
No. 846G30.	Dinner Knives Modeled Handle	10.09
No. 846G27.	Dinner Knives Hollow Handle	14.45

ADAM Design
BRIGHT FINISH

		Per doz.
No. 840G1.	Tea Spoons	4.41
No. 840G3.	Dessert Spoons	8.53
No. 840G4.	Table Spoons	8.82
No. 840G5.	Soup Spoons	8.82
No. 840G8.	Dessert Forks Flat Handle	8.53
No. 840G14.	Medium Forks Flat Handle	8.82
No. 840G15.	Medium Forks Hollow Handle	13.23
No. 840G28.	Dessert Knives Modeled Handle	8.66
No. 840G21.	Dessert Knives Hollow Handle	12.98

		Per doz.
No. 840G29.	Dinner Knives Modeled Handle	8.82
No. 840G26.	Dinner Knives Hollow Handle	13.23

STAINLESS KNIVES

No. 840G22.	Dessert Knives Hollow Handle	14.07
No. 840G30.	Dinner Knives Modeled Handle	10.09
No. 840G27.	Dinner Knives Hollow Handle	14.45

PATRICIAN Pattern
BRIGHT FINISH

		Per doz.
No. 842G1.	Tea Spoons	4.41
No. 842G3.	Dessert Spoons	8.53
No. 842G4.	Table Spoons	8.82
No. 842G5.	Soup Spoons	8.82
No. 842G8.	Dessert Forks Flat Handle	8.53
No. 842G14.	Medium Forks Flat Handle	8.82

		Per doz.
No. 842G15.	Medium Forks Hollow Handle	13.23
No. 842G28.	Dessert Knives Modeled Handle	8.66
No. 842G21.	Dessert Knives Hollow Handle	12.98
No. 842G29.	Dinner Knives Modeled Handle	8.82
No. 842G26.	Dinner Knives Hollow Handle	13.23

STAINLESS KNIVES

No. 842G22.	Dessert Knives Hollow Handle	14.07
No. 842G30.	Dinner Knives Modeled Handle	10.09
No. 842G27.	Dinner Knives Hollow Handle	14.45

TUDOR PLATE

ALL SETS ON THIS PAGE COME WITH FREE CHESTS

Queen Bess Pattern

The Chest Buffet is *Free*
You pay for contents only

CONTENTS

6 Knives	6 Tablespoons
6 Forks	1 Butter Knife
6 Teaspoons	1 Sugar Spoon

A staple 26-Piece Set of Silverware fit for any home. A striking display feature, slips easily into sideboard drawer.

Handy Tray for carrying silver to the table.

26-PIECE BUFFET CHEST

No. 835G96. 26-piece set with embossed handle knives.
Per set 8.03

No. 835G97. 26-piece set with hollow handle knives.
Per set 11.41

Baronet Pattern

26-PIECE BUFFET CHEST

No. 831G96. 26-piece set with embossed handle knives.
Per set 8.03

No. 831G97. 26-piece set with hollow handle knives.
Per set 11.41

Duchess Pattern

26-PIECE BUFFET CHEST

CONTENTS

6 Knives	6 Tablespoons
6 Forks	1 Butter Knife
6 Teaspoons	1 Sugar Spoon

No. 833G96. 26-piece set with embossed handle knives.
Per set 8.03

No. 833G97. 26-piece set with hollow handle knives.
Per set 11.41

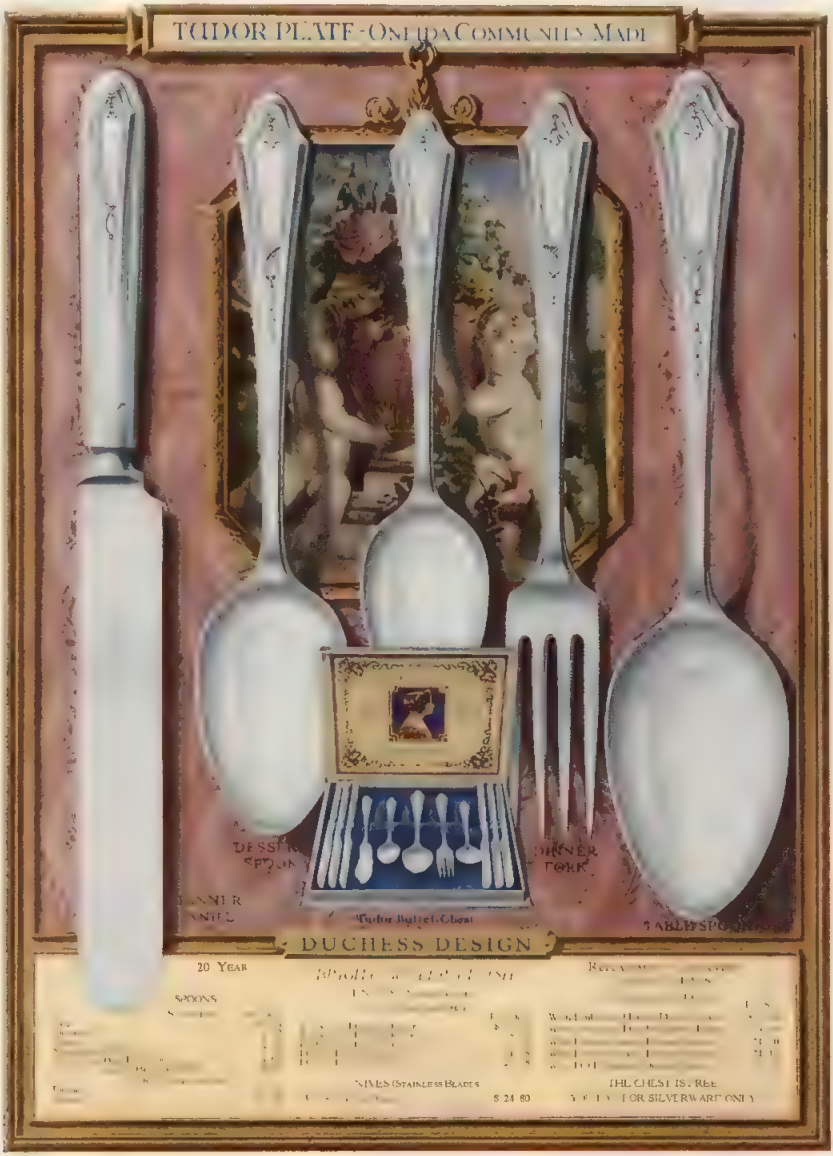
Free Chest With 43 Piece Set

42-Piece Set. A Complete Service for Six. The chest illustrated makes a strikingly handsome display. A well chosen combination, encased in a most attractive, substantial blue chest—harmonious in every particular.

6 Dinner Knives Embossed
6 Dinner Forks
6 Individual Salad Forks
12 Teaspoons
6 Soup or Dessert Spoons
2 Tablespoons
1 Butter Knife
1 Sugar Spoon
1 Cold Meat Fork
1 Gravy Ladle

43 Piece Set Illustrating Queen Bess Pattern

No. 835G98. Queen Bess Pattern. Per set.. 14.45
No. 833G98. Duchess Pattern. Per set..... 14.45
No. 831G98. Baronet Pattern. Per set..... 14.45


TUDOR PLATE - ONEIDA COMMUNITY MADE
DESSERT SPOON
DINNER FORK
DINNER KNIFE
Tudor Butler Chest
TABLESPOON
DUCHESS DESIGN
20 YEAR
SPOONS
KNIVES (STAINLESS BLADES
THE CHEST IS FREE
FOR SILVERWARE ONLY

"U. S." NO. 30 ACETYLENE GENERATOR

This generator is manufactured to meet the ever increasing demand for independent units in the oxy-acetylene industry. It is the most simple and efficient apparatus manufactured for the generation of acetylene gas and is thoroughly reliable, and automatic in its operation. Shops that do considerable oxy-acetylene welding and cutting, or those at some distance from a recharging station, are handicapped unless they manufacture their own acetylene gas. By so doing, the gas is generated where wanted, when wanted, and as much as desired, at about 1c per foot, or from one-third to one-fourth the cost of cylinder gas.

Gases Available.

Oxy-acetylene welding and cutting apparatus is depended upon as an emergency repair method. For this reason sufficient oxygen and acetylene should always be on hand to supply the largest jobs. On account of oxygen cylinders being loaned free, a large quantity can be kept on hand. This is not true of acetylene gas. The shortage of acetylene tanks, their large initial cost, as well as the high price of recharging and transportation charges both ways handicaps many welders. To return a tank that is only one-half used to the charging station means a total loss of that gas, yet that amount of gas might not be sufficient to complete a good sized emergency job that would bring a big price. Having a generator on hand is the only positive assurance of having gas always available.

Automatic Control.

"U. S." No. 30 Acetylene Generators feed small sized carbide to water by means of a simple spring motor. There are no weights or cables to hinder the operator. When there is sufficient gas generated to raise the pressure to the desired point, it automatically shuts off the carbide feed. This is positive and cannot fail. To start the motor again, it is necessary to use some of the gas already generated. The apparatus is extremely simple, easy to keep clean and there is nothing to get out of order. One charge will take 30 lbs. of 1¼x⅝ inch carbide, which will produce 150 cubic feet of acetylene gas. The carbide is automatically fed, in small quantities, into deep water, and as the gas bubbles rise to the surface, they are cooled, washed and emerge free from all impurities. There is no after generation; the feed stops as soon as the desired pressure is obtained.

High or Low Pressure.

These generators may be used either on high or low pressure systems. The entire regulation of pressure is so simple that in case a low pressure is desired it may be automatically set to one or two pounds and will remain there until the entire charge is used. On the other hand, if a pressure of fifteen pounds is wanted, it may be obtained with the same ease. With the use of such a generator the worker is not bound to use either high or low pressure systems; both may be used at will.

Carbide.

"U. S." No. 30 Generators are designed to use the nut (1¼x⅝ inch) size carbide, which is procurable from practically every hardware or jobbing house throughout the country, if not purchased direct from the carbide warehouse, in any quantity desired.

Portability.

Where necessary, these generators may be moved from place to place when they are charged by using the safety locking device, which absolutely prevents any carbide being added to the water. To operate, this locking device is opened and the generator is again ready for use.

No. 30—Acetylene Generator (without carbide). Weight, complete, 325 pounds. F. O. B. Minneapolis, each.....$175.00

"U. S." GENERATOR UNIT NO. 7

This equipment is exactly the same as "U. S." Welding Unit No. 1, except that instead of using acetylene gas furnished in drums, this unit includes a "U. S." 30-lb. acetylene generator.

This feature is exceptionally attractive in that acetylene gas is generated at a cost of about one-third the cost of gas in drums. This saving will more than pay the additional cost of this equipment over a No. 1 Unit in a very short time.

This equipment is recommended for use for all garages, blacksmiths and machine shops, and has a capacity covering any of this class of work that is likely to come to the average shop.

"U. S." Generator Unit No. 7 includes the following equipment:

1 "U. S." No. 30 Positive Feed Acetylene Generator.
1 "U. S." No. 3 (NON-FLASH) Welding Torch.
3 "U. S." Special Drawn Bronze Welding Tips, Nos. 2, 4 and 6.
3 "U. S." Special Drawn Copper Welding Tips, Nos. 8, 10 and 14.
1 "U. S." Oxygen Welding Regulator.
1 "U. S." 3,000 lb. Triple Reading Safety Back, Cylinder Pressure Gauge.
1 "U. S." 50 lb. Working Pressure Gauge.
1 "U. S." 3 in. Acetylene Welding Regulator.
1 "U. S." 500 lb. Cylinder Pressure Gauge.
1 "U. S." 50 lb. Working Pressure Gauge.
2 Lengths (12½ ft. each) "U. S." High Pressure Welding Hose.
4 "U. S." Hose Connections.
1 "U. S." Gas Ignitor with extra tip.
1 Pair "U. S." No. 3 Welding Goggles.

No. 7 Generator Unit—Without carbide. Weight, complete, 365 pounds. Each.....$275.00

All "U. S." Welding Units which include an acetylene generator have two acetylene tank or generator pressure gauges, so that the operator may provide an acetylene drum and use the equipment as a portable plant, leaving the generator in the shop when working outside. One gauge will be on the generator and the other on his portable apparatus.

All above one in a crate.

DISPLAY CASES

UNIVERSAL

Plate glass top and sides. Oak case and trimmings, green plush lining.

‡No. 5—Length 15 3-4 inches; width 8 1-4 inches; height 3 3-4. Weight packed 15 lbs. Each, . $12.00

Items marked thus ‡ not carried in stock. Shipped direct from factory.

‡DISPLAY BOXES

For Pocket Knives, Shears, Scissors and Razors.

Plush Covered Sunk Top.

Made of black imitation leather covered cardboard, with green velveteen covered sunk top for displaying sample; and celluloid button lift, at one end of top, showing Universal trademark.

No.	Outside Dimensions	For	Each
‡200—	4⅝x2⅝ in.	Pocket knives	$0.18
‡201—	7½x3 in.	Razors and 6-inch scissors	.39
‡202—	7¾x3¾ in.	6, 6½ and 7-in. shears	.45
‡203—	9¼x4 in.	7½, 8 and 8½-in. shears	.63
‡204—	11¼x4½ in.	9 and 10-in. shears	.74
‡205—	4½x2⅝ in.	4-in. scissors	.33
‡206—	6¾x2¾ in.	4½, 5 and 5½-in. scissors	.39
‡207—	8¾x3¼ in.	Barber shears, all sizes	.50

All items marked thus ‡ not carried in stock. Shipped direct from factory.

KNIFE TOOL KITS

Pocket

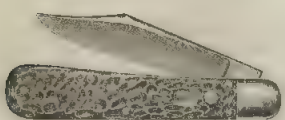
So-Handy.

This is an ideal pocket outfit for motorists, campers, fishermen, farmers, etc.

A complete, compact kit, useful in numberless ways. It can be carried in the pocket and is a practical, serviceable outfit for all kinds of odd jobs. It comprises a splendid jack knife with cocoa handle and seven tools (which can be instantly attached to the knife handle) file, reamer, screwdriver, bottle opener, chisel, rule and gimlet. The knife is built for service with an exceptionally good blade and the interchangeable tools are made of high-grade steel carefully hardened and tempered. Size of pounch 3x4½ inches; length of knife open 6½ inches.

No. 27—Black leather pounch. Per dozen.....$24.00
One kit in a box; weight ½ pound.

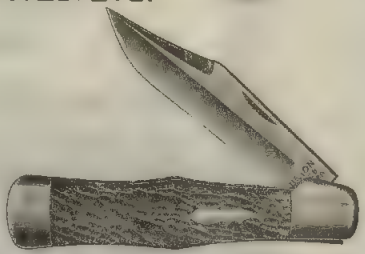
HUNTING KNIVES



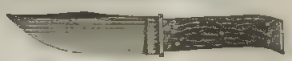
No. 1543¾—4¾ inches, safety push button, one heavy clip blade 3½ inches long, stag handle, half polished blade, iron lines. polished steel bolster. Weight, per dozen, 3½ pounds. Per dozen.. .....$19.50
Packed one-half dozen in a box.

No. 0020—Cast steel blade, stag handle, nickel silver guard, with leather sheath.

Inches	6	7
Weight, per dozen, lbs.	5½	6
Per dozen	$22.50	$25.15



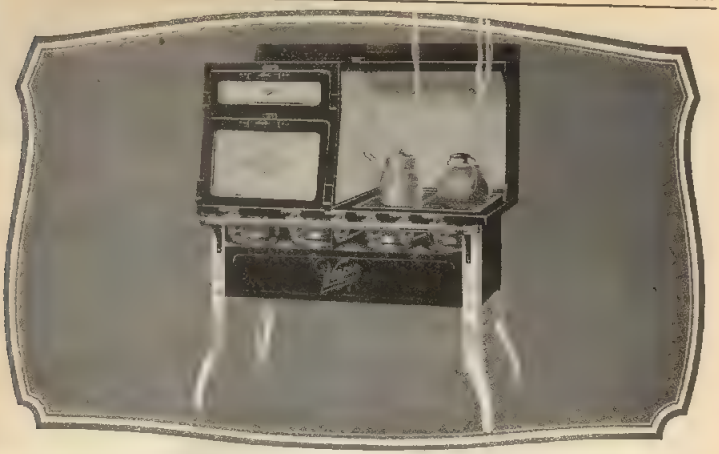
5⅝ inches overall stag handle. Folding pocket type knife. 3⅝ inch sabre clip large blade. Highly polished. Brass lined nickel silver cap and bolster.
No. 61106—Weight, per dozen, 4¾ lbs. Per dozen $50.70
Packed one-half dozen in a box.



Best quality polished steel blades milled back on blades, flat genuine stag handle. Nickel silver cap and ferrule. Genuine brown leather sheath riveted and sewed. See illustration for sheath No. 445.
No. 61162—Length of blade, 4¼ inches; weight, per dozen, 5¾ lbs. Per dozen.....$50.70
Packed one dozen in a box.

4-inch blade ribbed back on blades. Stag handle, nickel silver cap. Sheath as with No. 61162.
No. 61158—Weight, per dozen, 5 lbs. Per dozen.$50.70
Packed one dozen in a box.

4⅞ inch polished blade, 1⅝ inches wide. Full grip redwood handle. Nickel silver cap and ferrule. Same sheath as with No. 61162.
No. 310138—Weight, per dozen, 4¾ pounds. Per dozen $50.70
Packed one dozen in a box.



An oil range as fine as the finest gas range —and it burns GAS made from kerosene

No odor
No wicks
No noise
No soot
No smoke
Nothing to smart the eyes

THIS good-looking cabinet range with its pure white enamel splashers, oven door panels and legs and its electro-plated grids will give fresh interest to your oil stove section because of the exclusive advantages it offers. It makes a demonstration that always gets favorable attention.

It operates without smoke, smell or soot. It is noiseless. It has no wicks or wick substitutes. Its burner (patented) converts kerosene into gas. Each burner is a miniature gas plant—exceedingly simple —and compact.

It produces hydro-carbon gas which burns with a clean, blue flame that can be turned up and down -regulated like a gas range. This burner is guaranteed for the life of the range. It won't burn out—it can't clog and it is a marvel of economy.

You get 32 to 36 hours full heat or 50 to 60 hours of simmering heat from a single gallon of kerosene. There is no other oil stove equal to Vapo in quality or performance.

Write at once and get full information. Styles to meet all needs with or without ovens. Our policy calls for exclusive representation and you will find it worth while to investigate.

THE VAPO STOVE COMPANY, Lima, Ohio

Vapo LIMA, OHIO

WORLD'S HIGHEST GRADE OIL RANGES

Cost of truck-operation, like the cost of running your business, easily becomes excessive unless you watch it—and analyze it.

The items that make up your mileage-cost—gasoline, oil, tires, repairs—all offer possible savings that will cut the cost of mileage.

But before you know where the cutting should be done, you need accurate records of mileage to parallel your fuel, oil, and tire costs. These you get from a good Hub Odometer—and there's no end of uses to which you can put them.

Would you compare operating costs of the different trucks in your service? Veeder Hug Odometers will report them.

Would you bring to light the operating economies of one driver, and the profit-eating carelessness of another? You can do it with the Veeder.

Would you find the minimum cost of operating your trucks of a given capacity or make? It's an easy matter with the Veeder.

Would you like to prove which qualities or brands of fuel, oil, tires, supplies are better buy from the standpoint of mileage? Check them up with a Veeder.

Would you like to know the shortest, cheapest routing for deliveries over a given territory? Read it from your Veeder.

To be able to get these results—to compare costs under different operating conditions, and know that your figures are right—you need continuous, unbroken and dependable mileage-records over sufficient periods. The continuous service of the VEEDER is founded on features of odometer construction found only in the Veeder, and indispensable to a lasting mechanism. They are:

1. A patented stuffing-box which prevents leakage of grease into the operating mechanism. Packed with a cotton wicking and saturated with graphite and tallow, this stuffing-box bars trouble from axle grease working into the mechanism or onto the dials.

2. The mechanism of the odometer is sealed into the cap with a lead ring, forced in under pressure and giving the solidity of a weld. Under a tremendous vibration of the truck axle, this is the one secure method, yet shellac has been commonly used.

3. The glass or bezel over the dial, which is about 3-16 inch thick, is held in place by a lead ring forced in under pressure, making the dial water- and oil-tight.

4. Absolute accuracy and uniformity of parts is assured by the well-known Veeder specialization in precision and workmanship and counting mechanisms. Inspection and testing standards make every Veeder a correct assembly of perfect parts before it can leave the factory.

5. Parts subject to hardest wear are made of hardened steel. The studs on which the dials revolve are of copper-nickel alloy, and will not rust or corrode. The dials are locked and prevented from turning except when driven by the mechanism—yet no springs are empoyed. (The locking mechanism is similar to the so-called "Geneva motion" and has been employed in Veeder counting mechanisms for many years.)

The Veeder records up to 100,000 miles in tenths of a mile, then repeats. It always registers forward, whether truck runs forward or backward. Totals cannot be falsified by disconnecting gears and running wheel backward. The instrument seals on to the front hub, and cannot be tampered with without detection.

‡**Veeder**—Weight, each, — pounds. Each . .$20.00

Note—In ordering, specify the make, model, year of manufacture of truck, and size of front wheel.

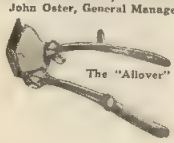
HAIR CLIPPERS

"Allover" Clippers are known everywhere as the quality clippers. Their simple but sturdy construction, their appearance, their perfect balance, and the ease and accuracy of operation are their selling points "Allover" Clippers are made in two styles

The "Allover" for general use, 5 sizes—½ 1 0, 00, 000

The "Allover" Junior for neck shaving and children's hair, 2 sizes—00, 000

O. M. MFG. CO., Racine, Wis.
John Oster, General Manager



The "Allover" Junior

GILLETTE

Portable Electric Clipping, Grooming and Shearing Machines.
Hanging and Pedestal Types.

Gillette Hanging Type Portable Electric Clipping, Grooming and Shearing Machine

Operated on the light circuit furnished by any Electric Light & Power Co., or on any make of Farm Lighting Plant.

The convenience of the Gillette Portable Electric Clipping, Grooming and Shearing Machines appeals to every progressive stockman, farmer, stable owner, veterinarian and dealer of dogs. Attached to an ordinary lamp socket it is instantly ready for work. No mechanical experience required to install or operate them.

Gillette Clipping Machine Co., Inc.
129-131 West 31st Street, Dept. A
New York, N. Y.
Price list on request.

CLIPPERS, Hair

Allover—See O. M. Mfg. Co.
All Over, Jr.—See O. M. Mfg. Co.
American Shearer Mfg. Co., Nashua, N. H. "Cadet," "Columbian," "Express," "Full Back," "Martlet," "Shaver," "Speed," "Standard," "Swift," "Tiger," "Wide Awake"
★For descriptive data of the above, see index on page 6
A-1 Toilet—See Chicago Flexible Shaft Co.
B & S—See Brown & Sharpe Mfg. Co.
Bay State—See Coates Clipper Mfg. Co.
Boker (H.) & Co., 101 Duane, New York, N. Y.
Bressant—See Brown & Sharpe Mfg. Co.
Brown & Sharpe Mfg. Co., Providence, R. I. "B & S." "Bressant," "Figaro"
Cadet—See American Shearer Mfg. Co.
Capitol—See Coates Clipper Mfg. Co.
Cattaraugus Cutlery Co., Little Valley, N. Y
Chicago Flexible Shaft Co., 5578 Roosevelt Rd., Chicago, Ill. "A-1 Toilet," "American Gentlemen"
Coates Clipper Mfg. Co., Worcester, Mass. "Bay State," "Capitol," "Khedive," "Left Hand," "Liberty," "Success," "Triumph," "Victor"
Columbian—See American Shearer Mfg. Co.
Essex Clipper & Tool Co., 38 Littleton Av., Newark, N. J.
Express—See American Shearer Mfg. Co.
Figaro—See Brown & Sharpe Mfg. Co.
Full Back—See American Shearer Mfg. Co.
Geier (F. A.) Co., 5112 St. Clair Av., Cleveland, O.
Khedive—See Coates Clipper Mfg. Co.
Left Hand—See Coates Clipper Mfg. Co.
Liberty—See Coates Clipper Mfg. Co.
Martlet—See American Shearer Mfg Co.
O. M. Mfg. Co., Racine Wis. "Allover," "Allover, Jr."
★For descriptive data of the above, see index on page 6
Orange Valley Cutlery Co., 156 Leslie, Newark, N. J.
Shaver—See American Shearer Co
Speed—See American Shearer Mfg. Co.
Standard—See American Shearer Mfg. Co.
Success—See Coates Clipper Mfg. Co.
Swift—See American Shearer Mfg Co.
Tiger—See American Shearer Mfg. Co.
Triumph—See Coates Clipper Mfg. Co.
Ucan Safety Hair Cutter Co., 230 Madison Av., New York, N. Y.
Victor—See Coates Clipper Mfg. Co.
Wide Awake—See American Shearer Mfg. Co.

CLIPPERS, Hand, Horse

American Horse—See American Shearer Mfg. Co.
American Shearer Mfg. Co., Nashua, N. H. "American Horse," "B. B. Herald," "Hunter," "Lenox," "New Market," "No. 64," "Polo"
★For descriptive data of the above, see index on page 6
B. B Herald—See American Shearer Mfg. Co.
Heinish (R.) Son Wks., 109 Bruce, Newark, N. J.
Hunter—See American Shearer Mfg. Co.
Lenox—See American Shearer Mfg. Co.
New Market—See American Shearer Mfg. Co.
No. 64—See American Shearer Mfg. Co.
Polo—See American Shearer Mfg. Co.

CLIPPERS, Horse—See Clipping Machines, Horse; also Clippers, Hand, Horse

CLIPPERS, Rivet—See Clippers, Bolt and Rivet

CLIPPING MACHINES, Cattle

American Shearer Mfg. Co., Nashua, N. H. "Priest's No. 7 and No. 40"
★For descriptive data of the above, see index on page 6
Chicago Flexible Shaft Co., 5578 Roosevelt Rd., Chicago, Ill. "Stewart"
Gillette Clipping Machine Co., Dept. A, 129 W. 31st, New York, N. Y.
★For descriptive data of the above, see index on page 6
Priest's No. 7 and No. 40 See American Shearer Mfg. Co.
Stewart—See Chicago Flexible Shaft Co.

CLIPPING MACHINES, Horse

American Shearer Mfg. Co., Nashua, N. H. "Priest's No. 7 and No. 40"
★For descriptive data of the above, see index on page 6
BB—See American Shearer Mfg. Co.
Chicago Flexible Shaft Co., 5578 Roosevelt Rd., Chicago, Ill. "Stewart"
Coates Clipper Mfg. Co., Worcester, Mass.
Gillette Clipping Mach. Co., Dept. A, 129 W. 31st, New York, N. Y.
★For descriptive data of the above, see index on page 6
Priest's No. 7 and No. 40—See American Shearer Mfg. Co.
Stewart—See Chicago Flexible Shaft Co.

THE SHURE WINNER PRICE LIST

HIGH GRADE AMERICAN MADE RAZORS

Manufactured Specially for us

Selected Quality Steel

"Vanadium" Razor, ⅝ inch blade, full concave, glaze finish, polished tang and back, gimped underneath. Grained Ivory celluloid handle. Each in box, ½ dozen in carton.

No. 9C116. Square Point. Per dozen..... 6.75

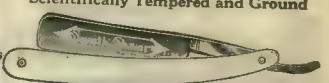
No. 9C117. Round Point. Per dozen..... 6.75

"Enesco-Special" Razor. ⅝ inch blade, full concave, double shoulder, tang double gimped, galvanic gold etching on blade. Amber color transparent celluloid handle, beveled edges. Each in box, ½ dozen in carton.

No. 9C120. Square Point. Per dozen..... 8.00

No. 9C121. Round Point. Per dozen..... 8.00

Scientifically Tempered and Ground



"Smooth Shaver" Razor. ⅝ inch blade, full concave, double shoulder, gimped tang with two straps. Galvanic gold etching on blade. Grained Ivory celluloid handle, beveled edges. Each in box, ½ dozen in carton.

No. 9C118. Square Point. Per dozen..... 8.00

No. 9C119. Round Point. Per dozen..... 8.00

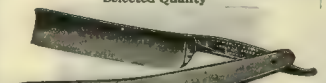
"Gold Medal" Razor. ⅝ inch blade, full concave, mirror polish on both sides. 14K gold plated oval tang, corrugated on both edges. Galvanic gold etching on blade. Transparent amber color celluloid handle. Each in box, ½ dozen in carton.

No. 9C122. Square Point. Per dozen..... 9.50

No. 9C123. Round Point. Per dozen..... 9.50

HIGH GRADE—IMPORTED RAZORS

Selected Quality



No. 10C915. "Morley" Razor ⅝ inch Square Point Blade, Full hollow ground, double shoulder, file tang, well tempered, honed and finely finished. White celluloid ivory grained handle featuring a bar riveted through handle to prevent blade from striking. Each in a box, ½ dozen in carton.

Per dozen..... 14.50

No. 10C913. The "Victor" Razor ⅝ inch Square Point Blade. Double shoulder, full hollow ground, grooved tang, full finished and etched in gilt. Grained ivory celluloid handle with nickel silver ends. Each in box, ½ dozen in carton.

Per dozen..... 15.00

Excellent Values

No. 10C916. "Rheingold" Razor. ⅝ inch Square Point Blade, hollow ground, double shoulder, back and tang heavily gold plated. Transparent amber color celluloid handle. Each in box, ½ doz. in carton.

Per dozen..... 15.00

No. 10C911. Kastor Razor. ⅝ inch Square Point Blade. Extra fine quality full hollow ground, double shoulder, file tang, finely honed and well finished throughout. Grained Ivory celluloid handle with nickel silver ends. Each in box.

Per dozen..... 17.50

No. 10C903. Novelty Razor. ⅝-inch blade, extra hollow ground, double shoulder, square point, well ground and highly polished. A first-class blade, fitted with celluloid ivory handle which constitutes part of the case. A very sanitary way of keeping your razor.

Per dozen..... 16.50

Novelty Razor

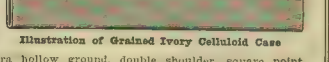
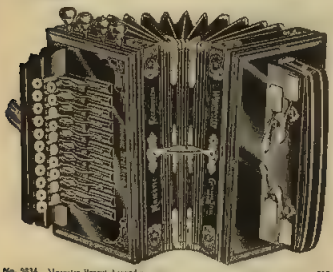


Illustration of Grained Ivory Celluloid Case

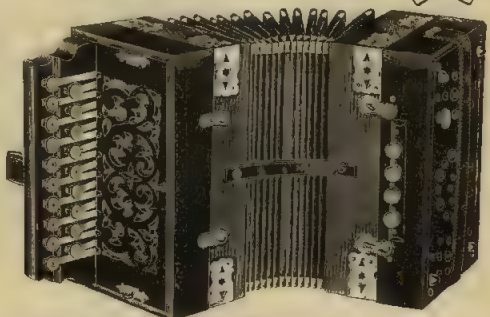
Popular Standard Brand Accordions

PRICES EACH

Well Made and Finished — Elegant Value at These Low Prices

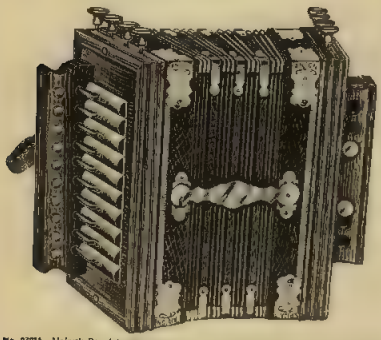


No. 9834 Majestic Brand Accordion ... $18.00
No. 9835 Majestic Brand Accordion ... 20.50

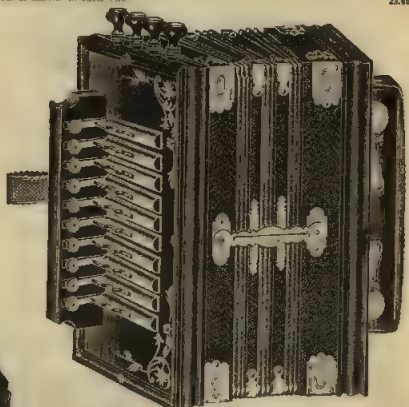


ILLUSTRATING VIENNA CONCERT ACCORDION NO. 9826

No. 9824 Vienna Concert Accordion, each $12.00
No. 9824½ Vienna Concert Accordion, each 12.50
No. 9825 Vienna Concert Accordion, each 14.00
No. 9836½ Vienna Concert Accordion, each 17.25
No. 9837½ Vienna Concert Accordion, each 19.25
No. 91937 Vienna Majestic Accordion, each 23.00



No. 92011 Majestic Brand Accordion, each $11.50



No. 9818 Vienna Model Accordion, each $13.00

Description and Prices of These Accordions

MAJESTIC BRAND
Size 5 x11 . Inches

No. 9834 Mahogany finish wood case, with metal corners, bellows frame covered with imitation leather, 10 bass keys with 4 tone reeds, 19 bass keys with 8 tone reeds, 4 sets of reeds, 4 treble keys, 4 bass keys, each $18.00
No. 9835 Same as No. 9834, but with 21 bass keys, each 20.50

Size 5 x10 . Inches

Mahogany finished wood case, with metal corners, keyboard, 10 bass keys, 19 bass keys with 8 tone reeds, 4 sets of reeds, 4 treble keys, 4 bass keys, bellows covered with imitation leather, each $11.50

VIENNA CONCERT
Size 5½x3 . Inches

No. 9824 Accordion, finish case, with metal corners, 10 bass keys, 20 bellows folds, 41 MELODY REEDS, 4 TONE AND HIGH AND LOW REEDS, 4 TREBLE KEYS, another 4 keys of long keys, giving in all 23 keys, with 4 bass keys, each $12.00
No. 9824½ Same as No. 9824, but has 10 bass keys, each 12.50
No. 9825 Same as No. 9824, but with 20 bass keys, each 14.00

Size 6x10 . Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $14.00
No. 9836 Same as No. 9824, but has 10 bass keys, each $17.25
No. 9837 Same as No. 9824, but has 20 bass keys, each 19.25

VIENNA MAJESTIC
Size 6x11 Inches

No. 91937 Accordion, finish case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $23.00

VIENNA MODEL
Size 6 x11 . Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $13.00
No. 9818 Same as No. 9824, but has 10 bass keys, each $13.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $13.00
No. 9818½ Same as No. 9818, but has 10 bass keys, each $13.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $14.00
No. 9818¾ Same as No. 9818, but has 10 bass keys, each $14.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $15.00
No. 9819 Same as No. 9818, but has 10 bass keys, each $15.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $16.00
No. 9819½ Same as No. 9819, but has 10 bass keys, each $16.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $17.00
No. 9819¾ Same as No. 9819, but has 10 bass keys, each $17.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $18.00
No. 9820 Same as No. 9819, but has 10 bass keys, each $18.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $19.00
No. 9820½ Same as No. 9820, but has 10 bass keys, each $19.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $20.00
No. 9820¾ Same as No. 9820, but has 10 bass keys, each $20.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $21.00
No. 9821 Same as No. 9820, but has 10 bass keys, each $21.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $22.00
No. 9821½ Same as No. 9821, but has 10 bass keys, each $22.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $23.00
No. 9821¾ Same as No. 9821, but has 10 bass keys, each $23.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $24.00
No. 9822 Same as No. 9821, but has 10 bass keys, each $24.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $25.00
No. 9822½ Same as No. 9822, but has 10 bass keys, each $25.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $26.00
No. 9822¾ Same as No. 9822, but has 10 bass keys, each $26.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $27.00
No. 9823 Same as No. 9822, but has 10 bass keys, each $27.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $28.00
No. 9823½ Same as No. 9823, but has 10 bass keys, each $28.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $29.00
No. 9823¾ Same as No. 9823, but has 10 bass keys, each $29.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $30.00
No. 9824 Same as No. 9823, but has 10 bass keys, each $30.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $31.00
No. 9824½ Same as No. 9824, but has 10 bass keys, each $31.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $32.00
No. 9824¾ Same as No. 9824, but has 10 bass keys, each $32.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $33.00
No. 9825 Same as No. 9824, but has 10 bass keys, each $33.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $34.00
No. 9825½ Same as No. 9825, but has 10 bass keys, each $34.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $35.00
No. 9825¾ Same as No. 9825, but has 10 bass keys, each $35.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $36.00
No. 9826 Same as No. 9825, but has 10 bass keys, each $36.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $37.00
No. 9826½ Same as No. 9826, but has 10 bass keys, each $37.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $38.00
No. 9826¾ Same as No. 9826, but has 10 bass keys, each $38.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $39.00
No. 9827 Same as No. 9826, but has 10 bass keys, each $39.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $40.00
No. 9827½ Same as No. 9827, but has 10 bass keys, each $40.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $41.00
No. 9827¾ Same as No. 9827, but has 10 bass keys, each $41.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $42.00
No. 9828 Same as No. 9827, but has 10 bass keys, each $42.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $43.00
No. 9828½ Same as No. 9828, but has 10 bass keys, each $43.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $44.00
No. 9828¾ Same as No. 9828, but has 10 bass keys, each $44.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $45.00
No. 9829 Same as No. 9828, but has 10 bass keys, each $45.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $46.00
No. 9829½ Same as No. 9829, but has 10 bass keys, each $46.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $47.00
No. 9829¾ Same as No. 9829, but has 10 bass keys, each $47.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $48.00
No. 9830 Same as No. 9829, but has 10 bass keys, each $48.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $49.00
No. 9830½ Same as No. 9830, but has 10 bass keys, each $49.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $50.00
No. 9830¾ Same as No. 9830, but has 10 bass keys, each $50.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $51.00
No. 9831 Same as No. 9830, but has 10 bass keys, each $51.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $52.00
No. 9831½ Same as No. 9831, but has 10 bass keys, each $52.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $53.00
No. 9831¾ Same as No. 9831, but has 10 bass keys, each $53.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $54.00
No. 9832 Same as No. 9831, but has 10 bass keys, each $54.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $55.00
No. 9832½ Same as No. 9832, but has 10 bass keys, each $55.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $56.00
No. 9832¾ Same as No. 9832, but has 10 bass keys, each $56.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $57.00
No. 9833 Same as No. 9832, but has 10 bass keys, each $57.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $58.00
No. 9833½ Same as No. 9833, but has 10 bass keys, each $58.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $59.00
No. 9833¾ Same as No. 9833, but has 10 bass keys, each $59.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $60.00
No. 9834 Same as No. 9833, but has 10 bass keys, each $60.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $61.00
No. 9834½ Same as No. 9834, but has 10 bass keys, each $61.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $62.00
No. 9834¾ Same as No. 9834, but has 10 bass keys, each $62.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $63.00
No. 9835 Same as No. 9834, but has 10 bass keys, each $63.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $64.00
No. 9835½ Same as No. 9835, but has 10 bass keys, each $64.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $65.00
No. 9835¾ Same as No. 9835, but has 10 bass keys, each $65.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $66.00
No. 9836 Same as No. 9835, but has 10 bass keys, each $66.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $67.00
No. 9836½ Same as No. 9836, but has 10 bass keys, each $67.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $68.00
No. 9836¾ Same as No. 9836, but has 10 bass keys, each $68.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $69.00
No. 9837 Same as No. 9836, but has 10 bass keys, each $69.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $70.00
No. 9837½ Same as No. 9837, but has 10 bass keys, each $70.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $71.00
No. 9837¾ Same as No. 9837, but has 10 bass keys, each $71.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $72.00
No. 9838 Same as No. 9837, but has 10 bass keys, each $72.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $73.00
No. 9838½ Same as No. 9838, but has 10 bass keys, each $73.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $74.00
No. 9838¾ Same as No. 9838, but has 10 bass keys, each $74.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $75.00
No. 9839 Same as No. 9838, but has 10 bass keys, each $75.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $76.00
No. 9839½ Same as No. 9839, but has 10 bass keys, each $76.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $77.00
No. 9839¾ Same as No. 9839, but has 10 bass keys, each $77.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $78.00
No. 9840 Same as No. 9839, but has 10 bass keys, each $78.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $79.00
No. 9840½ Same as No. 9840, but has 10 bass keys, each $79.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $80.00
No. 9840¾ Same as No. 9840, but has 10 bass keys, each $80.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $81.00
No. 9841 Same as No. 9840, but has 10 bass keys, each $81.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $82.00
No. 9841½ Same as No. 9841, but has 10 bass keys, each $82.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $83.00
No. 9841¾ Same as No. 9841, but has 10 bass keys, each $83.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $84.00
No. 9842 Same as No. 9841, but has 10 bass keys, each $84.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $85.00
No. 9842½ Same as No. 9842, but has 10 bass keys, each $85.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $86.00
No. 9842¾ Same as No. 9842, but has 10 bass keys, each $86.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $87.00
No. 9843 Same as No. 9842, but has 10 bass keys, each $87.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $88.00
No. 9843½ Same as No. 9843, but has 10 bass keys, each $88.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $89.00
No. 9843¾ Same as No. 9843, but has 10 bass keys, each $89.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $90.00
No. 9844 Same as No. 9843, but has 10 bass keys, each $90.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $91.00
No. 9844½ Same as No. 9844, but has 10 bass keys, each $91.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $92.00
No. 9844¾ Same as No. 9844, but has 10 bass keys, each $92.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $93.00
No. 9845 Same as No. 9844, but has 10 bass keys, each $93.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $94.00
No. 9845½ Same as No. 9845, but has 10 bass keys, each $94.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $95.00
No. 9845¾ Same as No. 9845, but has 10 bass keys, each $95.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $96.00
No. 9846 Same as No. 9845, but has 10 bass keys, each $96.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $97.00
No. 9846½ Same as No. 9846, but has 10 bass keys, each $97.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $98.00
No. 9846¾ Same as No. 9846, but has 10 bass keys, each $98.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $99.00
No. 9847 Same as No. 9846, but has 10 bass keys, each $99.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $100.00
No. 9847½ Same as No. 9847, but has 10 bass keys, each $100.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $101.00
No. 9847¾ Same as No. 9847, but has 10 bass keys, each $101.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $102.00
No. 9848 Same as No. 9847, but has 10 bass keys, each $102.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $103.00
No. 9848½ Same as No. 9848, but has 10 bass keys, each $103.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $104.00
No. 9848¾ Same as No. 9848, but has 10 bass keys, each $104.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $105.00
No. 9849 Same as No. 9848, but has 10 bass keys, each $105.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $106.00
No. 9849½ Same as No. 9849, but has 10 bass keys, each $106.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $107.00
No. 9849¾ Same as No. 9849, but has 10 bass keys, each $107.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $108.00
No. 9850 Same as No. 9849, but has 10 bass keys, each $108.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $109.00
No. 9850½ Same as No. 9850, but has 10 bass keys, each $109.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $110.00
No. 9850¾ Same as No. 9850, but has 10 bass keys, each $110.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $111.00
No. 9851 Same as No. 9850, but has 10 bass keys, each $111.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $112.00
No. 9851½ Same as No. 9851, but has 10 bass keys, each $112.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $113.00
No. 9851¾ Same as No. 9851, but has 10 bass keys, each $113.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $114.00
No. 9852 Same as No. 9851, but has 10 bass keys, each $114.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $115.00
No. 9852½ Same as No. 9852, but has 10 bass keys, each $115.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $116.00
No. 9852¾ Same as No. 9852, but has 10 bass keys, each $116.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $117.00
No. 9853 Same as No. 9852, but has 10 bass keys, each $117.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $118.00
No. 9853½ Same as No. 9853, but has 10 bass keys, each $118.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $119.00
No. 9853¾ Same as No. 9853, but has 10 bass keys, each $119.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $120.00
No. 9854 Same as No. 9853, but has 10 bass keys, each $120.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $121.00
No. 9854½ Same as No. 9854, but has 10 bass keys, each $121.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone and high and low reeds, 4 treble keys, 4 bass keys, each $122.00
No. 9854¾ Same as No. 9854, but has 10 bass keys, each $122.00

Size 6½ x12 Inches

Accordion, finish wood case, with metal corners, 10 bass keys, 20 bellows folds, 41 melody reeds, 4 tone

HARMONICAS OF EVERY DESCRIPTION

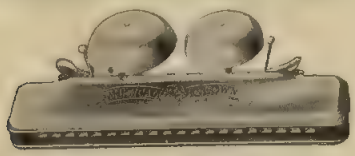
At Bargain Prices

Every merchant should have a small stock on hand. When displayed, it is then the boy resolves to save his pennies to purchase one. In this manner a stock will sell quickly. Prices per dozen.

TREMOLO CONCERT

No. 9627 "Hero," 16 double holes on each side, 64 reeds, white metal plates, nickel covers, tremolo tuning, size 5x2 inches, per doz. **$11.80**

No. 9107 "Artist," Gebr. Ludwig, 10 double holes, 20 reeds on brass plates, full concert, nickeled covers, in hinged lid box, per doz **$11 80**



THE MUSICAL CLOWN

No. 9651 The Musical Clown, with 2 bells, 20 double holes, 40 reeds, nickel plated heavy covers, in hinged box, per doz **$11 90**

No. 9091

No. 9091 "Victoria Tremolo Concert," 7 inches in length, large double-sided, two different keys, 32 double holes, 64 perfectly tuned tremolo reeds. Mahogany extension ends with fancy gold designing. Brassed plates finely nickel-plated covers. In attractive telescope box with gold lettering, per doz **$18.90**

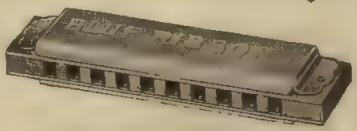
No. 9092 "Victoria Tremolo Concert," 8½ inches in length, large double-sided, 40 double holes, 80 perfectly tuned tremolo reeds, otherwise same as No. 9091, per doz **$3 80**

No. 9093 "Victoria Tremolo Concert," 9 inches in length, large double-sided tremolo instrument in two different keys, 48 double holes, 96 perfectly tuned tremolo reeds, otherwise same as No. 9091, per doz **$0.35**

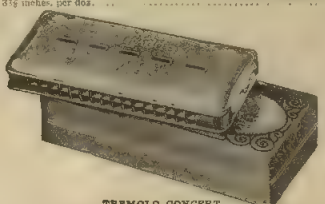
No. 9622 "The Hero," 16 double holes, 32 reeds, nickeled plates and covers, tremolo tuning, per doz **$6 20**

HIGH ART

No. 9584 24 double holes, 48 reeds, brass plates, nickel covers, length 7 inches, per doz. . . **$12.60**



No. 900 "Blue Ribbon," made by Hohner, 10 single holes, 20 reeds on brass plates, length, 3⅝ inches, per doz. **$4 20**



TREMOLO CONCERT

No. 9320 "Happy Hours," 16 double holes on each side, 64 reeds, white metal plates, heavy nickel-plated covers, size 4⅝x1⅝ inches, in hinge box with chromo lid, per doz **$16 80**

The World's Famous Hohner Harmonicas

No. 9184M

No. 9184B The Old Standby—10 single holes, 20 reeds, brass plates, nickel-plated covers, in neat hinged box, per doz. **$10 80**

No. 9186M "The Marine Band"—10 single holes, 20 reeds, brass plates, heavy covers brass covers finely nickel plated, open back, in fine hinged box, per doz. **11 20**

No. 92CND Full Concert Harp—10 double holes, 40 reeds, brass plates, brass reeds finely nickel-plated, in white hinged box, per doz **16 80**

No. 9186C Concert, The Marine Band—10 double holes, 40 reeds, brass plates, heavy convex covers finely nickel-plated, full concert, in fine hinged red box per doz. **20 20**

No. 923 Gebr. Ludwig, 10 single holes, brass reed plates, nickel covers, complete 4 keys, per doz **$4 20**

No. 9606-64 Hohner

Comes in beautiful presentation box as shown

No. 9605 Echo Harmonica—5 inches long, 16 double holes, 32 bell metal reeds on brass plates, nickel covers, in colored lithographed hinged box, per doz **$13 45**

No. 9606-56 "Echo"—5 inches long, 16 double holes on each edge, 64 bell metal reeds on brass plates, nickel-plated covers, in colored lithographed box, hinged, per doz **26 90**

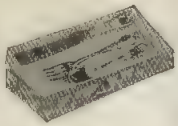
No. 9607 Same as 9606, 16 inches long, 20 double holes on each edge, 80 bell metal reeds on brass plates, nickel-plated covers, in colored lithographed, hinged box, per doz **33 60**

No. 9608 Same—7⅝ inches long, 24 double holes on each edge, 96 bell metal reeds on brass plates, in colored lithographed hinged box, per doz. **40 35**

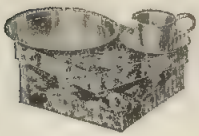
TOY SETS

Cinderilla.

Nothing could please a little girl more than a present of one of these dainty aluminum toy sets. Made of pure aluminum, very pleasingly designed and packed in a pretty Cinderilla pattern gift box.

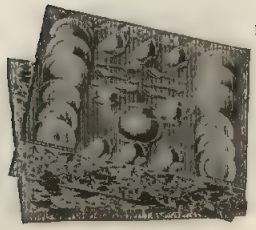


No. 3260H—Three-piece set; polish finish; embossed knife, fork and spoon in a Cinderilla box. Weight, per set, 2 ounces. Per dozen sets $4.70



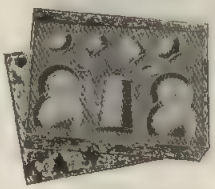
No. 3266H — Three-piece set; satin finish, burnished cup, saucer and plate in a Cinderilla box. Weight, per set, 4 ounces. Per dozen sets $4 70

No. 112H—Eight piece cooking set; dip finish stew pan, sauce pan, pudding pan, Berlin kettle, preserving kettle, dish pan, fry pan and bread pan in a Cinderilla box. Weight, per set, 1¾ pounds. Per dozen sets . . . $18.82



No. 165H—Twenty-seven piece set; dip finish tea pot, cups, creamer, sugar bowl, satin finish saucers and plates in a Cinderilla box. Wt., per set, 1⅝ lbs. Per dozen sets . . . $23.52

No. 3265H—Six-piece set; satin finished cup, saucer and plate, polish finish, embossed knife, fork and spoon in a Cinderilla box. Weight, per set, 6 ounces. Per dozen sets $9.42



No. 167H — Eleven-piece set; dip finish tea pot, cups, creamer and sugar bowl, satin finish saucers and plates in a Cinderilla box. Weight, per set, 14 ounces. Per dozen sets $14.12

PEPPER AND SALT SETS

Colonial pattern combination condiment set; consists of salt, pepper and tooth-pick holder, all standard size, self-righting; satin finish with parts polished. Packed in neat decorated box

No. 2402—Weight, per dozen sets, 4¼ pounds. Per dozen sets $4.85

Dimensions	Height, in.	Diameter, in.
Shakers	2⅝	2⅛
Tooth-pick holder	2	2½

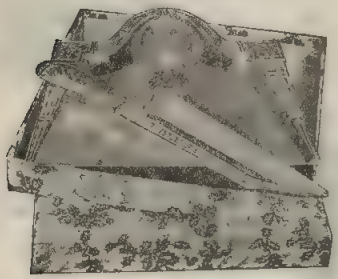
Aluminum self-righting pepper and salt shakers and tooth-pick holder; packed in neat holly decorated box. Very desirable for holiday trade.

No. 2401—Weight, per dozen sets, 4¼ lbs. Per dozen sets $4.29

ALUMINUM WARE

Viko.

CRUMB PANS



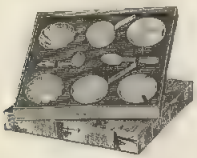
Aluminum crumb pan and scraper, neatly embossed and packed in a holly decorated box. Very desirable for holiday trade.

No. 2491 (1007H)—Weight, per dozen sets, 4¼ pounds. Per dozen sets $13.18

One in a box.

VIKO NURSERY RHYME TOY SETS

EIGHT PIECE CHILD'S TOY SET

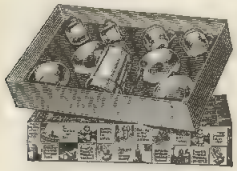


Dip finish. Box measures 8x8x1 inches

No. 161H Child's 8-piece Toy Set in a box . . . . . Per Dozen Sets, $4 40

Two dozen sets in a shipping carton, weight 7½ pounds.

NINE PIECE CHILD'S COFFEE SET



Combination satin-mottle and polish finish, knurled; inside of cup satin finish. Box measures 18x11x3½ inches

Set consists of:

1 Percolator, polish finish, 1 pint cap., 2¾ inches diameter
4 Cups, 4-oz. cap., 2⅜ inches diameter
4 Saucers, 4 inches diameter

No. 113H Child's 9-Piece Coffee Set in a box . . . . Per Dozen Sets, $7 56

One dozen sets in a shipping carton, weight 22 pounds

TEN PIECE CHILD'S TEA SET

Dip finish. Box measures 12⅛x10⅛x3½ inches.

Set consists of

1 Creamer, 1½ oz cap., 1⅝ inches diameter.
1 Sugar Bowl, 1½ oz. cap., 2 inches diameter.
2 Cups, 1½ oz. cap., 2¼ inches diameter.
2 Saucers, 3¼ inches diameter.
2 Plates, 3½ inches diameter
2 Plates 3½ inches diameter.

No. 168H—Child's 10 Piece Tea Set in a box . . . . . Per Dozen Sets, $8 94

One dozen sets in a shipping carton. Weight 12½ pounds.

ELEVEN PIECE CHILD'S TEA SET

Dip finish. Box measures 12⅛x8⅛x3½ inches

Set consists of

1 Tea Pot, ½ pint cap., 2¼ inches diameter
2 Cups, 1½ oz. cap., 2¼ inches diameter
1 Creamer, 1½ oz. cap., 1⅝ inches diameter
1 Sugar Bowl, 1½ oz. cap., 2 inches diameter
2 Saucers, 3¼ inches diameter.
2 Plates, 3½ inches diameter
2 Spoons

No. 167H Child's 11-Piece Tea Set in a box . . . . . Per Dozen Sets, $13 50

One dozen sets in a shipping carton, weight 13 pounds

TWELVE PIECE CHILD'S TOY SET

Dip finish. Box measures 12x9½x1 inches

No. 162H Child's 12-Piece Toy Set in a box . . . . . Per Dozen Sets, $7 66

Two dozen sets in a shipping carton, weight 12 pounds

TWELVE PIECE CHILD'S COOKING SET

Dip finish. Box measures 19⅞x11x1½ inches

Set consists of

Sauce Pan, 9 oz. cap., 4 inches diameter
Stew Pan, 14 oz. cap., 5 inches diameter
Pudding Pan, 14 oz. cap., 5 inches diameter
Mixing Bowl, 9 oz. cap., 4 inches diameter
Convex Sauce Pan, 10 oz. cap., 3⅛ inches diameter
Preserving Kettle, 9 oz. cap., 4 inches diameter
Dish Pan, 14 oz. cap., 5 inches diameter
Jelly Cake Pan, 5 inches diameter
Fry Pan, 4½ inches diameter
Pie Plate, 4½ inches diameter
Bread Pan, 4⅞x2⅝x2 inches diameter
Jelly Cake Pan, 5x5x1⅛ inches

No. 164H Child's 12-Piece Cooking Set in a box . . . . . Per Dozen Sets, $28 24

Half dozen sets in a shipping carton, weight 15 pounds.

NINETEEN PIECE CHILD'S TEA SET

Dip finish. Box measures 18x11x3½ inches

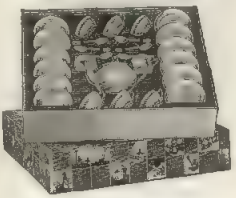
Set consists of.

1 Tea Pot, ½-pint cap., 2 inches diameter
4 Cups, 1½-oz cap., 2¼ inches diameter
1 Creamer, 1½-oz. cap., 1⅝ inches diameter
1 Sugar Bowl, 1½ oz. cap., 2 inches diameter
4 Saucers, 3¼ inches diameter
4 Plates, 4⅛ inches diameter.
4 Spoons.

No. 166DH Child's 19-Piece Tea Set in a box . . . . . Per Dozen Sets, $18 36

One dozen sets in a shipping carton, weight 23 pounds.

TWENTY-SEVEN PIECE CHILD'S TEA SET



Dip finish. Box measures 16x13⅛x3½ inches.

Set consists of

1 Tea Pot, ½-pint cap., 2 inches diameter at top
6 Cups, 1½ oz. cap., 2¼ inches diameter
1 Creamer, 1½ oz cap., 1⅝ inches diameter
1 Sugar Bowl, 1½ oz. cap., 2 inches diameter
6 Saucers, 3¼ inches diameter
6 Plates 3½ inches diameter
6 Spoons

No. 165DH—Child's 27-Piece Tea Set in a box . . . . . Per Dozen Sets, $22 58

Half dozen sets in a shipping carton. Weight 12 pounds.

VIKO NURSERY RHYME TOY SETS

These Toy Sets are packed in the copyrighted Nursery Rhyme boxes, irresistibly attractive, with their bright colors and amusing pictures.

They are a quality product in every respect, workmanship, appearance and packing

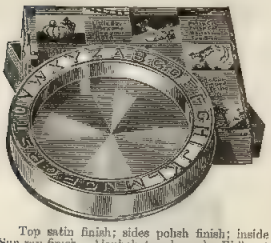
There is a steady and growing demand for these sets throughout the year and especially in the holiday season.

CHILD'S PERCOLATING COFFEE POT

Polish finish. Welded spout. Detachable handle. Nickeled brass hinge. Sturdy rivets. Substantially constructed percolating inset

No. 5170H—Capacity 1 pint, diameter at bottom, 3¼ inches. One in a box . . . . . Per Dozen, $18 36

CHILD'S PLATE



Top satin finish; sides polish finish; inside Sun-ray finish Alaphabet embossed. Will not upset Box measures 6½x6½x1½ inches

No. 3256H—Diameter top, 6¼ inches. diameter inside, 4⅝ inches, one in a box . . . . . Per Dozen, $4 70

THREE PIECE CHILD'S SET

Natural bright finish Cup knurled Box measures 7x7x2⅛ inches. Set consists of

Cup, 4 oz cap., 2⅝ inches diam. at top.
Saucer, 4⅛ inches diam. at top.
Plate, 6⅞ inches diam. at top.

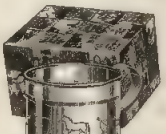
No. 3266H—Child's 3-Piece Set in a box . . . . . Per Dozen Sets $4 70

Two dozen sets in a shipping carton. Weight 9¾ pounds

CHILD'S CUP

Combination satin and polish finish, knurled. Embossed, assorted "Bal y and 'Daring

No. 2271H Capacity, 6 ounces, diameter top, 2⅝ inches, one in a box Per Dozen, $2 70



Combination satin and polish finish, knurled. Stamped with animal designs

No. 2284H—Capacity, 6 ounces; diameter top, 2¾ inches. One in a box. . . . . Per Dozen, $2.82

THREE PIECE CHILD'S SET

Satin finish, embossed Box measures 7x2⅞x⅞ inches Set consists of

Knife, 6¾ inches long.
Fork, 5½ inches long.
Spoon, 4½ inches long

No. 3260H Child's 3-Piece Set in a box . . . . . Per Dozen Sets, $4 24

FOUR PIECE CHILD'S COOKING SET

Dip finish. Box measures 12⅛x10½x3⅛ inches. Set consists of:

Pie Plate, 4¼ inches diameter at bottom.
Jelly Cake Pans, 5 inches diameter at bottom.
Sauce Pan, 9 oz cap, 4 inches at bottom
Mixing Bowl, 9 oz. cap., 4 inches at bottom.

No. 163H—Child's 4-piece Cooking set in a box . . . . . Per Dozen Sets, $9 42

One dozen sets in a shipping carton, weight 13 pounds.

SIX PIECE CHILD'S SET

Natural bright finish cup, saucer and plate, the cup knurled. Satin finish knife, fork and spoon. Box measures 7x7x2½ inches

Set consists of:

Cup, 4 oz. cap., 2⅝ inches diam. at top.
Saucer, 4⅛ inches diameter at top.
Plate, 6⅞ inches diameter at top.
Knife, 6¾ inches long.
Fork, 5½ inches long.
Spoon, 4½ inches long.

No. 3265H—Child's 6-Piece Set in a box . . . . . Per Dozen Sets, $8 94

Two dozen sets in a shipping carton, weight 11¼ pounds.

SIX PIECE CHILD'S TOY SET

Dip finish. Box measures 7x5x1 inches. Not packed in Nursery Rhyme box

No. 3267H—Child's 6-Piece Toy Set in a box. . . . . Per Dozen Sets, $2.82

Twelve dozen sets in a shipping carton, weight 31 pounds

EIGHT PIECE CHILD'S COOKING SET

Dip finish. Box measures 18x11x3½ inches. Set consists of:

Sauce Pan, 9 oz cap 4x1⅞ inches.
Pudding Pan, 14 oz cap., 5x1¾ inches.
Mixing Bowl, 9 oz cap., 4 inches diameter.
Preserving Kettle, 9 oz. cap., 4x1⅞ inches
Jelly Cake Pan 5x5x1½ inches.
Pie Plate 4⅛x1 inches
Fry Pan, 4⅞x⅝ inches.
Bread Pan, 4⅞x2¾x2 inches

No. 112H—Child's 8-piece Cooking Set. in a box . . . . . Per Dozen Sets, $18 50

One dozen sets in a shipping carton, weight 21 pounds.

The Complete Line of Celebrated Vitanola Talking Machines at Factory Prices

"The Phonograph of Marvelous Tone"

PRACTICAL GIFTS THAT BRING HAPPINESS

"As Natural as Life"

The Houses of Co-operation Inc. 1889 1924

INTRODUCTION

The phonograph of marvelous tone—the instrument which makes you forget you are listening to a phonograph record—the VITANOLA!
Close your eyes. Forget for the moment all about its external appearance—an idealization of art which has framed its highest expressions in the exquisite beauty of Vitanola cabinets. Just close your eyes. And listen. Then you will know that, by whatever mechanical means it is accomplished, you are hearing phonographic reproduction such as you never heard before. You have found perfection in tonal reproduction. With a Vitanola you have at your command the music treasures of the world, vocal or instrumental, for with the Vitanola patented Duplex Reproducer all disc records of any make can be played.
In this Folder you have a few glimpses of certain features and exclusive refinements which, together with the artistic beauty of its cabinet work, combine to place the Vitanola foremost among all instruments of its kind.

DEVICES

MOTOR—The multiple spring, worm-drive principle on which it is constructed runs as sure to built—it runs you against trouble. It winds easily (whether a record is playing or not) and plays from three to nine selections without re-winding, according to the size of the machine.

TONE CHAMBER—The tone chamber of the Vitanola is constructed on the laws-to-laws principle—a scientific construction which has several discovery features and exclusive features. It amplifies the tone and brings it out in the way it was meant to be—the purest tone made.

TONE MODIFIER—Vitanola Tone Modifier is a simple, pure device which gives an unlimited range of new shades of sound. It is operated from the upper part of the cabinet and enables you to obtain at any time whatever the volume of tone desired, from the faintest whisper to the full, rich volume of sound.

TEMPO REGULATOR—A simple device, related to the Vitanola gives you absolute control of the speed of the record. Let some record—Vitanola Tempo Regulator is essential to the perfect reproduction of any and all records.

TONE ARM AND REPRODUCER—There are two kinds of records on the market—the Lateral Cut and the Hill-and-Dale type. Vitanola plays all records. No extra attachments required. All you have to do is to set the reproducer for the record you are playing—a simple turn of the lever does it—and the Vitanola plays it correctly and perfectly well. The Vitanola Tone Arm is unlike any other. It is scientifically correct. Its construction is such that it plays every kind of record perfectly. Used exclusively on Vitanola Phonographs is the Vitanola patented Duplex Reproducer, which plays all records of any make. Its simplicity is unique. It is the only reproducer which can be used on all records. The proper position for playing Edison or Pathe records is instantly obtained by the Vitanola Duplex Reproducer. Other reproducers require constant adjustment. The Vitanola Duplex Reproducer is recommended and endorsed by the World's Best Artists.

EQUIPMENT—Our Free Offer—Every Vitanola machine sent out is equipped with a full set of accessories, including Needle Cabinet, Record Album, Oil Can, Tone Regulator, Tone Modifier, Tempo Regulator, Tone Arm Rest, Reproducer Rest, Tone Arm Clamp, Tone Arm Spring, Tone Arm Adjusting Screw, Tone Arm Adjusting Screw Lock Nut, Tone Arm Adjusting Screw Lock Nut Screw, Tone Arm Adjusting Screw Lock Nut Screw Washer, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer Screw, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer Screw Washer, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer Screw Washer Screw, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer Screw Washer Screw Washer, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer Screw Washer Screw Washer Screw, Tone Arm Adjusting Screw Lock Nut Screw Washer Screw Washer Screw 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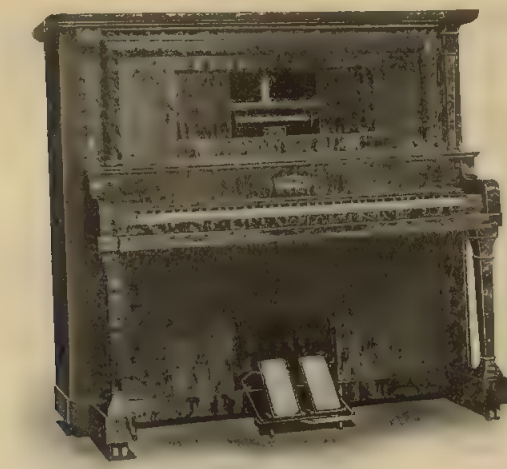
The Celebrated Waterman Pianos at Factory Prices

STRICTLY HIGHEST GRADE THROUGHOUT OF SUPREME CHARACTER AND UNSURPASSED QUALITY



PRACTICAL GIFTS THAT BRING HAPPINESS

We illustrate and quote on this page two of the highest grade Player Pianos made in this Country. Manufacturers have established a National reputation for the highest grade material used throughout, the unsurpassed workmanship and finish, the most exquisite style and appearance, and lastly, the purity and sweetness of tone and in elasticity of touch.

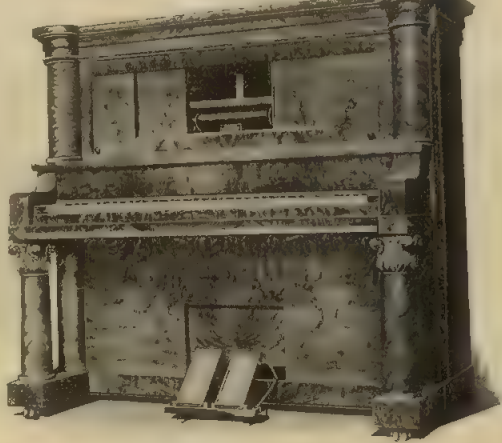
So enthusiastic are we, that these Waterman Pianos in player or upright styles represent the Greatest Values ever offered, that the material, construction, tone and finish are unexcelled and that your saving is so tremendous—such that you have no conception of, we will ship any style wanted and bear expense of freight charges from and to factory should instrument be found lacking or unsatisfactory.

DETAILS OF CONSTRUCTION

Following are some of the characteristics which have gained for the Waterman Piano its high standing in piano building:

The Case is scientifically constructed of the highest grade, thoroughly seasoned, kiln dried materials, and is double veneered throughout. Trusses, pilasters and all large mouldings are veneered. Small mouldings are of genuine solid walnut or mahogany to match. An Empire top is used exclusively.

The Back is supported by seven white rock maple posts which contribute a high degree of strength. It is carefully finished in a manner consistent with the quality and beauty of the case.



WARRANTED FOR 25 YEARS—(Will be just as good fifty years from now.)

This piano specially designed to meet the requirements of the player action. All appearances of the necessary extra [illegible] of case is eliminated by the artistically rounded corners. It is an instrument that is practical, elegant and free from [illegible] appearance common to so many player pianos. All improved devices to insure a life like reproduction of music have been [illegible] perfected in the player mechanism. Any Waterman Player I have may be easily and effectively played by hand as [illegible] device were absent with no loss of natural elasticity and lightness of touch. [illegible]

Cases made in Genuine Mahogany and Walnut. Dimensions: Height, 4 feet 7½ inches. Width, 5 feet 4½ inches. Depth, 2 feet 3 inches. **Made in Player Piano and Upright Styles.**

The remarkable high grade Concert, Grand Player—[illegible] Note [illegible] [illegible] [illegible]

"Janice Meredith"

Marion Davies and Joseph Kilgour, as Janice Meredith and General George Washington, respectively, give in Metro-Goldwyn's latest production a very vivid picture of Revolutionary days.

WALKING MA-MA DOLLS

14-INCH MAMMA DOLL

Height 14 inches. **Has unbreakable composition legs** from knee down. Head and hands are unbreakable. Nicely painted. Shoes and stockings. Guaranteed Ronson Voice. Always says "Mamma." Assorted colors, neat check dresses and caps to match. Packed ½ dozen in box.

No. 36N1. Per dozen..... 8.50

15-INCH MAMMA DOLL

Height 15 inches. Unbreakable composition head and hands. Cotton stuffed legs. Guaranteed Ronson Voice. It always says "Mamma." Well painted. Assorted color check dresses and cap. Shoes and stockings. Each in box.

No. 36N5. Per dozen..... 8.50

20-INCH GIRL DOLL

A Great Big Girl Baby. Full 20 inches high. Large, unbreakable composition head, beautifully painted, showing even the eyelashes. Guaranteed Ronson Mamma Voice. Shoes to button, stockings, dress, bloomers and cap. Each in box.

No. 36N38. Per dozen..... 16.50

DELUXE DOLL PEARL NECKLACE

Bunbonnet Doll with pearl bead necklace. 18 in. Full cotton stuffed body with strong composition head and hands. Assorted crepe and organdie dresses in very attractive colors and styles. Lace trimmed underwear, real shoes and stockings. Pretty sunbonnet with ribbon bow. Beautiful pearl necklace. Each in box

No. 36N39. Per dozen..... 19.50

18-INCH DOLL

Height 18 inches. Genuine guaranteed Ronson Mamma Voice. Unbreakable overize baby-like head and hands. Cotton stuffed legs. Shoes and stockings. Assorted dresses and caps to match. Packed each in a box.

No. 36N17. Per dozen..... 12.50

Two Faces Two Voices

A Wonder Doll. When dolly smiles she says mamma. Now turn the head around, pull hat back covering smiling face and a crying face is shown. The doll will then cry. **Two guaranteed voices.** 16½ inches high. Real shoes and mercerized stockings. Body full cotton stuffed. Each in box.

No. 36N22. Per dozen..... 21.00

Talking Sleeping Walking

Real Hair Wig Pearl Beads

Richly dressed 20-inch Walking Mamma Doll, with string of pearl beads, real hair wig and eyes that open and close. Composition head and hands. Full cotton stuffed. Guaranteed Mamma voice. The dress is a very daintily tinted organdie lace trimmed. Underskirt and drawers are white with lace trimming, large, lace-trimmed hat, with colored ribbon streamers. Colored mercerized half hose to match. Real shoes with ankle button straps. Each in individual carton with cardboard head protector.

No. 36N26. Per dozen..... 35.50

Rubber Rain Cape for Dolly

These Capes are large enough for any doll up to 20 in. high. Made of so-called silk rubber, with piped seams. Puckered at neck. Cute hood. Long skirt. Strings for tying. Assorted Red, Yellow, Green and Blue, to the box of one dozen. (Doll shown not included).

No. 36N45. Per dozen..... 4.25

Red Riding Hood Oilcloth Doll

Brilliant Scarlet Red Oilcloth Doll. "Little Red Riding Hood," has her oilcloth cape and hood just like the story book. Full 16 inches high. Unbreakable composition head. Small bell attached to belt. A big display item. Packed each in a box.

No. 41N8. Per dozen..... 8.00

Skeezix Oilcloth Doll Uncle Walt Pal

Nationally Advertised Cartoon Dolls. Every child loves Skeezix. Made of very fine quality artificial leather, finished in bright, fadeless colors. Perfect reproduction of the cartoon, designed by Frank King, originator of the Gasoline Alley cartoons. Dozen in box.

Catalogue No.	Item	Height In.	Per Doz.
41N9.	Skeezix	13	8.50
41N10.	Walt	27	16.75
41N11.	Pal	7	6.25

Finer Dressed Dolls—UNDRESSED AND KIDLYNE

18-INCH DOLL UNUSUALLY PRETTY

So much care was taken with the assorted dresses on these dolls that they are charming. The dolls are 18 inches high and have cloth hats, sewed hair wigs, beautiful heads, with sleeping eyes and real eyelashes. Complete underwear — Shoes and Stockings. Each sewed in lace trimmed box.

Assorted.

No. 5N794.
Per dozen..... **24.00**

20-INCH AVERAGE

Average height 20 inches. Beautiful heads with sewed hair wigs, sleeping eyes with real eyelashes. Full jointed, including wrists. Delicate colors, handsome silk dresses with ruffles and plaits. Lace and embroidery trimming, or imitation fur trimmed cloak outfit. Hats to match. Shoes and stockings. Each sewed in lace trimmed box.

No. 5N795.
Per dozen..... **38.50**

21-INCH DOLL

These dolls are all the product of master craftsmen. Large, beautifully modeled heads, surmounted by heavy sewed hair wigs, sleeping eyes, real lashes, full jointed. Charming dresses, assorted. Some have coats. Silks and Satins predominate. Try an assortment of a dozen. Each sewed in lace trimmed box.

No. 5N759.
Per dozen..... **36.00**

22 Inch Dolls. Very large, beautifully modeled heads adorned with very full sewed hair wigs. Sleeping eyes with real eyelashes. Dainty, beribboned hats. Silk and lace trimmed dresses. Lace trimmed underwear. Shoes and stockings. Each tied in lace trimmed box and carefully packed to prevent breakage.

No. 5N796.
Per dozen..... **42.00**

De Luxe 20 Inch Doll. Most of these have long, warm winter coats, with hats to match. Also full outfit of clothes underneath. A few of the lot without the coat are full 22 inches high and have gorgeous dresses. Finest workmanship throughout. Full jointed. Sewed wig, eyelashes, etc. Made by Master craftsmen. Each sewed in lace trimmed box.

No. 5N797.
Per dozen..... **48.00**

Extra Fine Quality Bisc Jointed Dolls

Dolls to be Dressed

Full Jointed Bisc Head Dolls in dainty chemise ready for dressing. Fine sewed hair wigs. Sleeping eyes. Eyelashes. Well proportioned. Fresh elastic. Dolls marked with stars are **without** shoes and stockings.

		Per Doz.
*5N730.	14½ inches....	12.00
5N731.	15½ inches....	12.00
5N23.	20¾ inches....	19.50
5N24.	23 inches.....	24.00
*5N728.	23½ inches....	36.00
*5N729.	25 inches.....	36.00
5N25.	27 inches.....	45.00
36N49.	35 inches. Each	8.75

Best Quality Imported Kidlyne Dolls

Best Quality Imported Kidlyne Dolls. Sleeping eyes, sewed wigs, real hair. Full jointed. Shoes and stockings. Each in box. Two larger sizes have eyelashes.

		Per Doz.
5N732.	15½ inches high.....	12.00
5N75.	17½ inches high.....	15.00
5N76.	20 inches high.....	19.50

23-INCH DOLL OUR BEST

Our finest dressed doll, 23 inches high. Dressed in silk. Lace trimmings. Hat to match. Very large, beautiful bisque head, with fine sewed hair wig. Real eyelashes. Full jointed. Shoes and Stockings. Each sewed in lace trimmed box.

No. 5N762.
Per dozen..... **54.00**

WOOD-WORKING MACHINES

WALLACE LABOR SAVING

Wallace tools will handle 80 per cent of the work done in practically any plant engaged in wood working. Furniture manufacturers, cabinet makers, pattern makers, auto body shops, sash and door factories, carriage makers, show case manufacturers, contractors, lumber yards, etc., have found that these machines eliminate waste motion, waste time, waste power, that they speed production, increase output and reduce cost. Their construction is as perfect as it is possible to make them.

BENCH SAW

UNIVERSAL

Cut-Off and Rip

Specifications

Universal—Diameter of saw, 7 in. Depth of cut, 2 in. Size of table, 17x20 in. Size of motor, ½ h. p. Speed, 5200 r. p. m. Height with stand, 36 in. Shipping weight, 185 lbs. Export shipping weight, 190 lbs. Export dimensions, 29x26x22 in. Equipped with socket and 10½ cord.....Each $230.00

Will handle stock 2 in. thick, 5 or 6 in. long. It is universal, as the saw (not the table) may be tilted for angles cutting up to 45°.

This tool can also be furnished in the plain type.

Plain Type—With A.C. or D.C. Motor.....Each $180.00

BAND SAW

16-INCH

A high grade motor driven band saw, fitted with ½-h. p. General Electric motor.

The safety guards are so arranged that accidents are almost impossible.

The illustration shows that, like all Wallace machines, the band saw is entirely self-contained.

The motor is totally enclosed to exclude dust.

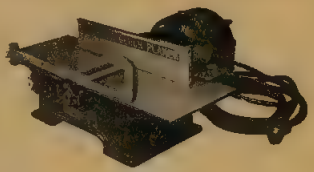
The gears run in oil.

Equipped with ball bearings throughout.

This machine will easily handle hard or soft wood up to 8 inches thick.

Wallace—Net weight, 340 lbs. Shipping weight, 470 lbs. .....Each $270 00

BENCH PLANERS OR JOINTERS



Specifications

Size of Planer—In.....	**4**	**6**
Width of cutting knife, in.	4	6
Length of front table, in.	10	15
Length of rear table, in.	9	15
Length over all, in.	19	30
Size of motor, h. p.	¼	½
Speed of cutter head, A. C. motor, r. p. m.	3600	3600
Speed of cutter head, D. C. motor, r. p. m.	4000	4000
Knives in cutter head	3	3
Shipping weight, lbs.	78	235
Export shipping weight, lbs.	81	245
Export dimensions, in.	19½x20x7½	34x10x22
Each	$80 00	$200.00

These machines can be furnished with countershaft where the direct motor driven feature is not desired.

4-in. Planer—With Countershaft and Pulley.....Each $80 00

6-in. Planer—With Countershaft and Pulley.....Each 195.00

It is important when ordering motor driven tools that you specify the kind of current. If direct current, specify voltage. If alternating current, specify voltage, phase and cycle. We carry in stock direct current motor driven tools, 110 and 220 volt, and alternating current motor driven tools 110 and 220 volt, single phase, 60 cycle. If tools are required with a voltage, cycle or phase different than noted above, it will be necessary to obtain them by a special factory order, subject to a special price.

These tools are equipped with General Electric Motors.

EXTRAS FOR WALLACE TOOLS

Set of Knives (3)—For 4-in. Jointer.....Set $3.15

Set of Knives (3)—For 6-in. Jointer.....Set 6.15

7-in. Combination Saw.....Each 3.15

7-in. Cross Cut Saw.....Each 3 15

7-in. Rip Saw.....Each 3 15

Band Saw Blades—Sizes, ⅛, ¼, ⅜, ½ in. .....Each 3.15

Jointing Device—For either 4-in. or 6-in. Planer....Each 2.25

CROSS-CUT SAWS

SIMONDS

Chinook—Cross Cut

Crescent Ground, 13 Gauge on Teeth, 17 Gauge on Back.

NO.	Length	Net Wgt. Each	EACH
520-5	6 ft.	7 lbs.	$7 44
520-5½	6½ ft.	7½ lbs.	8 31
520-6	6 ft.	9½ lbs.	9 36
520-6½	6½ ft.	10 lbs.	10 58
520-7	7 ft.	10½ lbs.	11 78

Royal Chinook—Cross Cut

Crescent Ground, 13 Gauge on Teeth, 18 Gauge on Back.

NO.	Length	Net Wgt. Each	EACH
503-6	6 ft.	8¼ lbs.	$13 86
503-6½	6½ ft.	10¼ lbs.	15 60
503-7	7 ft.	12¾ lbs.	17 32
503-7½	7½ ft.	13¾ lbs.	19 07

Royal Chinook—Falling

Crescent Ground, 13 Gauge on Teeth, 17 Gauge on Back

NO.	Length	Net Wgt. Each	EACH
518-6	6 ft.	6 lbs.	$13 86
518-6½	6½ ft.	7½ lbs.	15 60
518-7	7 ft.	9 lbs.	17 33
518-7½	7½ ft.	9½ lbs.	19 07
518-8	8 ft.	10 lbs.	20 97
518-8½	8½ ft.	11 lbs.	23 04
518-9	9 ft.	12 lbs.	25 13
518-10	10 ft.	13½ lbs.	29.63

ATKINS

This is a full width, heavy blade, toothed to the end. The teeth and rakers are extra long, with wide, roomy gullets for clearing the kerf of sawdust. They are particularly recommended for use in cutting fir, western pine and similar woods. They are made of Atkins celebrated Silver Steel, which insures a maximum toughness and longest wear.

They are Segment ground, which consists of finishing the blade of an absolutely even gauge along the toothed edge and from the toothed edge it is ground on the segment of a circle to center of back, which enables the saws to clear themselves.

Silver Steel—Cross Cut

Segment Ground, 13 Gauge on Teeth, 17 Gauge on Back

NO.	Length	Net Wgt. Each	EACH
51-6	6 ft.	9 lbs.	$13 00
51-6½	6½ ft.	9¾ lbs.	15.00
51-7	7 ft.	11 lbs.	17 00

Silver Steel—Falling

Segment Ground, 13 Gauge on Teeth, 17 Gauge on Back

This saw has similar teeth to No. 51, but blade is considerably narrower and is recommended for falling purposes, in woods similar to those for which the No 51 is best adapted

NO.	Length	Net Wgt. Each	EACH
53-6	6 ft.	7 lbs.	$13.00
53-6½	6½ ft.	7¾ lbs.	15.00
53-7	7 ft.	8½ lbs.	17.00

ATKINS

Segment Ground—Lance Tooth

14 Gauge on Teeth, 18 Gauge on Back

NO.	Length	Net Wgt. Each	EACH
361-5	5 ft.	6½ lbs.	$7 00
361-5½	5½ ft.	7 lbs.	7.74
361-6	6 ft.	7¾ lbs.	8 42
361-6½	6½ ft.	8½ lbs.	9 05
361-7	7 ft.	9 lbs.	9 84

ONE-MAN CROSS-CUT SAWS

SIMONDS

Straight Ground—Lance Tooth

NO.	Length	Net Wgt. Each	EACH
222-3	3 ft.	3⅜ lbs.	$4 41
222-3½	3½ ft.	4¼ lbs.	5 18
222-4	4 ft.	5⅛ lbs.	5.87
222-4½	4½ ft.	6⅛ lbs.	6 65
222-5	5 ft.	7 lbs.	7 35
222-5½	5½ ft.	8 lbs.	8 10

ATKINS

Sheffield

Segment Ground, 15 Gauge on Teeth, 17 Gauge on Back

Sheffield brand One-Man Saws are made of a fine grade of crucible steel, carefully tempered and nicely finished.

The handles are Easy Grip pattern, finely finished and made of carefully selected beech, varnished edges, fastened to the blade by two brass screws and a brass screw medallion.

NO.	Length	Net Wgt. Each	EACH
1000-3	3 ft.	2½ lbs.	3.75
1000-3½	3½ ft.	2¾ lbs.	4.50
1000-4	4 ft.	3⅛ lbs.	5.25
1000-4½	4½ ft.	4¼ lbs.	6.00
1000-5	5 ft.	5 lbs.	6.75

DRAG SAW BLADES

ATKINS SILVER STEEL

Vaughn Single Hook—Tapered—8-in. Butt, 6-in. Point

Lengths, 5, 5½, 6, 6½, 7, 7½ and 8 ft.

No. 1012-SH—12-gauge back, 10-gauge tooth.... Foot $1 85
No. 1010-SH—10-gauge back, 10-gauge tooth. Foot 1 68

Pacific Tooth—Tapered—6-in. Point

Lengths, 5, 5½, 6, 6½, 7, 7½ and 8 ft.

No. 1012-PT—12-gauge back, 10-gauge tooth.....Foot $1.85
No. 1010-PT—10-gauge back, 10-gauge tooth.....Foot 1.68

In ordering Drag Saw Blades always give name of machine blade is to be used on.

SCALE WEIGHTS

Cast Iron, Japanned.

For Even Balanced Scales.

Weight	½ oz.	1 oz.	2 oz.	4 oz.
Each	$0.20	0.20	0.25	0.25

Weight	8 oz.	1 lb.	2 lb.	4 lb.	8 lb.
Each ..	$0.30	0.40	0.60	1.00	1.80

For Portable Platform Scales.

For weighing, lbs.	50	100	200	300	500
Each	$0.35	0.40	0.60	0.80	1.20

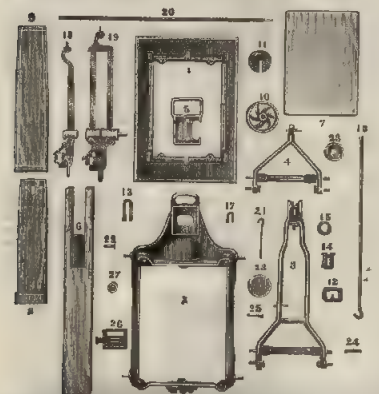
For Union Counter.

Size to weigh, lbs.	5-40	10-80
Each	$0.75	$0.85

U. S. Standard Test Weights.

50 lbs.—Cast iron. Each.....$5.50

PLATFORM SCALE PARTS



1	Iron Platform.	15	Center Ring.
2	Main Frame	16	Beam Rod.
3	Long Lever.	17	Small Beam Clevis.
4	Short Lever.	18	Single Beam.
5	Iron Cap.	19	Double Beam.
6	Wood Standard.	20	Standard Rod.
7	Platform Board.	21	Counterpoise Hook.
8	Lower Wood Cap.	22	Counterpoise Plate.
9	Upper Wood Cap.	23	Counterpoise Cup.
10	Wheel.	24	Straight Pivot.
11	Weight.	25	Hook Pivot.
12	Hook to Iron Cap.	26	Terret.
13	Large Beam Clevis.	27	Balance Ball.
14	Nose Iron.	28	Terret Bolt.

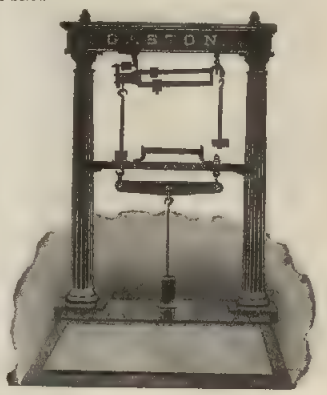
Always state the capacity of your scale.

Items marked thus ‡ not carried in stock, but shipped direct from factory.

WAREHOUSE

Made By N. B. Gaston Sons Co.
Dormant, Warehouse.

In situations where a large amount of weighing is done in one spot and especially where goods are handled on trucks, scales set with their platform level with the floor are very convenient. The materials weighed do not have to be lifted to the platform of the scale and back again and loaded trucks, barrels or casks may be loaded on the platform and weighed very quickly. These scales are shipped complete, requiring no material for installation. Furnished in three different styles and capacities as listed below



Nos.	91	92	93
Capacity, lbs.	2,500	3,500	5,000
Size platform	36x37	42x44	44x53
	Tall	Tall	Tall
Style beam	Double	Double	Double
Style pillars	Iron	Iron	Iron
Shipping weight, lbs.....	750	850	950
Price each	$105.00	$125.00	$160.00

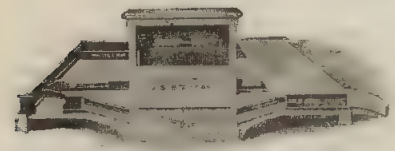
On the first three number scales, single beam and single wood pillar is furnished. while on the second three numbers, double tall iron pillars and double beam is furnished, and on the latter three numbers, short iron pillars and full capacity compound tare beam is furnished. All numbers have weigh beam placed on short side of scale, with the exception of No. 88, which has beam on long side of scale. For further particulars, write for special catalog applying to dormant scales.

NOTE.—Illustration shows scales Nos. 91, 92 and 93.

‡WAGON AND STOCK SCALES

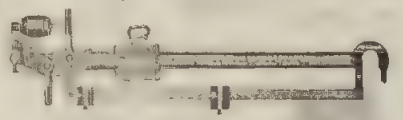
Gaston Twentieth Century Pitless.

Gaston Pitless.



We are placing the U. S. standard pitless scales on the market with great pride as we feel sure they cannot be outclassed by any other make in finish, simplicity and workmanship. It is the product of over seventy years' experience in scale building and embodies the very best and latest improvements known to scale makers. The above illustration shows the simplicity and everlasting quality of construction. Note the heavy steel frame and joist furnished with this scale. It is built entirely of metal with the exception of beam box and platform, and with ordinary care will last a lifetime. Where other makes are constructed with 6-inch channels for sides of frame, we use full 9-inch channels which enclose all working parts, making it wind and storm-proof. This is quite important as a scale with an opening on the sides will accumulate rubbish, snow, etc., in the working parts, resulting in friction and inaccuracy of weighing. The lever construction is the most simple and best known, consisting of two heavy cast rocker bars, one at each end. Only eight knife edge bearings are used throughout the main working levers, four in each rocker bar. Two of the bearings rest upon oscillating bearings to end of steel frame. Heavy steel I-beams are used for the sills of platform and attached to ends of these I-beams are also oscillating bearings which rest on the other two knife edge bearings of rocker bars. With this principle of construction, the oscillating bearings conform with full length of knife edge bearings and eliminates friction to the smallest possible degree. The levers attached at each end of rocker bars, extend direct to stirrup of weight beam which overcomes the using of a fifth lever in the center of scale. Note from the above cut that our fifth lever hangs under shelf in beam box which is entirely out of the way and avoids the expense and trouble of an extra foundation.

Full Capacity Compound Tare Beam.



The full capacity of the scale is weighed upon this beam, no loose weights to bother with or become altered. The top of upper beam is chilled and accurately spaced in small holes which the large poise locks itself by. This poise is fitted with latch and runs on a roll, making it very easy to operate. The upper beam is graduated in 200-pound marks, while the lower beam is graduated in 5-pound marks by the large poise and 2-pound marks by the small poise. Beam box is made of a good grade of lumber, painted two coats of white lead and fitted with lock and key. When shipped all the working parts are attached to steel frame, making it very easy to install. Directions for erecting sent with each scale.

U. S. Standard.

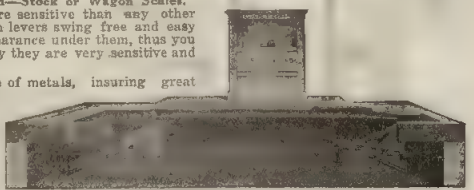
Nos.	159	160	161
Capacity, tons	4	5	6
Size of platform, feet	8x14	8x14	8x14
Approx. weight, each, lbs.	1,650	1,650	1,700
Each	$200 00	$210.00	$230.00

Furnished without material for foundation. Lumber required for installation: Fourteen 2x12 feet plank, 8 feet long; two 2x4, 18 feet long; and two 2x3, 8 feet long. The frame which is all steel is furnished by us. It does not need a mechanic for erection.

Gaston—Stock or Wagon Scales.

Wagon scales built on the pit style are more sensitive than any other style of scale. These scales are constructed with levers swing free and easy form the corners of the frame and plenty of clearance under them, thus you will note that friction is eliminated, consequently they are very sensitive and will allow of very close weighing.

The levers are made from a special mixture of metals, insuring great strength. The levers are double trussed and have needle point bearings and adjustable corner irons and checks. Heavy double brass beam and sliding poises, beam cupboard of the very best design and material and fitted with lock and key. Guaranteed for a term of ten years.



Prices given below are exclusive of timber and foundation. Steel frame or office fixtures and full capacity compound tare beam furnished at additional cost. Prices quoted on application. Directions for installing sent with each scale.

Nos.	145	146	147	150	151	154	155
Capacity, tons	4	5	6	6	8	6	8
Size of platform, feet	8x14	8x14	8x14	8x16½	8x16½	8x22	8x22
Price, double beam, each	$180 00	$210.00	$240.00	$265.00	$290.00	$280.00	$330 00
Price, full capacity beam, each	210.00	240.00	275.00	300.00	325.00	315.00	365.00

Items marked thus ‡ not carried in stock. Shipped direct from factory.

ESTABLISHED 44 YEARS

WAVERLY OIL WORKS CO.

Butler & 54th Street PITTSBURGH, PA.

Manufacturers and Refiners of

Mine Car Grease

and other

"All Pennsylvania" Mine Lubricants

Waverly Mine Car Greases

Specially prepared greases made to resist water and give superior lubrication under the severe conditions of mine car operation.

These greases work into bearings from wheel reservoirs in just the right volume, insuring perfect lubrication and economy. Whatever your equipment, roller bearings or cavity wheel system, there is a Waverly Grease to exactly fill your requirements. Low cold test, high lubricating quality and in several different consistencies to suit different types of car wheels and various operating conditions. Waverly Medium for cavity type wheels. Waverly Heavy for roller bearing types.

Waverly Greases are shipped in non refillable steel barrels without extra charge. Grease pumps can be readily attached.

Waverly Compound (Gears and Cable)

Greases that are impervious to both salt and fresh water. They are effective lubricants for gears and cable, protect from moisture and pitting and will not crack, dry up, chip or peel.

Waverly Wool Yarn Elastic Grease

Made to provide superior lubrication in locomotive journal boxes. This lubricant is composed of a pure wool yarn and genuine horse hair in high grade liquid grease and has a reputation for increasing haulage, minimizing wear on bearings and keeping down replacements and repairs. Used on armature shaft bearings it eliminates danger of windings becoming oil soaked.

Waverly Liquid Greases

Manufactured particularly for resaturating wool yarn elastic and special cup lubrication designed for long-time service with minimum attention.

Waverly Air Compressor Oils

Carbon on the exhaust valves always results in lowering the efficiency of the compressor and is the frequent cause of explosions. The use of these high grade filtered "ALL PENNSYLVANIA" Oils will prevent this. WAVERLY Air Compressor Oils are made to give perfect lubrication with an exceedingly small quantity of oil.

Waverly Gas Engine Oils

With these oils you can get more power from your mine locomotives. They will not give off excessive quantities of smoke to the inconvenience and detriment of health of your underground employees. Filtered "ALL PENNSYLVANIA" Products.

Waverly Gasolines

Much safer than ordinary Gasolines in Gasoline Mine Locomotives as there is less danger of fire from the exhaust. Provide unusual power.

Waverly Steam Cylinder Oils

"ALL PENNSYLVANIA" Products which can be furnished either straight or compounded with animal oils — Our "Mecca" Cylinder Oil has been giving satisfactory service for 25 years.

Waverly Engine, Dynamo and Machine Oils

These are straight run, filtered "ALL PENNSYLVANIA" Products of extremely high fire test and viscosities. These oils separate freely and quickly from water, which quality combined with the high flash test insures long life and unusual durability. They may be filtered repeatedly and reused many times.

GUARANTEE

All goods not entirely satisfactory in every respect may be returned at our expense and no charge will be made for what is used in making trial. You are the sole judge.

Waverly Turbine Oils

Specially prepared "ALL PENNSYLVANIA" Products guaranteed not to foam or emulsify and their efficiency is far beyond oils ordinarily put out for this purpose. They separate quickly from water. What is more important THEY ARE NOT ACID TREATED.

Waverly Lubrication Engineering Service

Waverly Engineers, operating through our Industrial Division, are always at your service and are not only prepared to render any assistance that you might require on your present installation, but having had experience with all types and makes of machinery the world over, would gladly give advice on any new machinery installations contemplated or under way.

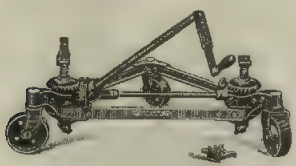
AUTO TWIN JACKS

These jacks provide the only practical means of handling complete or dismantled automobiles in the garage, repair shop, storage room, paint shop, display room, etc. With them one man can readily manipulate a car in any desired manner. The auto dealer will find a ready sale for them among his customers.

They supply all the service of turn-table, transport, lifting jacks and tire rests. As a lifting jack it is preferable to the ordinary type of jacks as the 34-inch base offers an absolute safe and dependable support for dismantled cars. Brakes can be safely and quickly tested with the rear axle supported upon one of these jacks. The long extension handle is also a great convenience.

No. 9—Lifting leverage 400 to 1; 34-inch wheel base; length of handle 26 inches; 1⅛-inch screws; diameter of wheels 4¼ inches; width of tire 2 inches; range of lift 9 inches; lifting capacity 4,000 pounds each. Shipping weight, 50 pounds. Each.....$15.00

‡**No. 9**—Rubber tired, otherwise as above. Each.$22.50



Extra Heavy Auto Twin Jacks.

The caster yokes on this jack are very strongly designed and made of the best cast steel. The large gear nuts which raise the screws each revolve upon twenty ⅜-inch steel balls which operate between two very heavy, hard steel thrust bearings. Each wheel yoke revolves upon two sets of steel balls. The 7-inch wheels enable enormous burdens to be transported over comparatively rough floors with almost incredible ease. Large roller bearings in the hubs assist in reducing the resistance to a minimum.

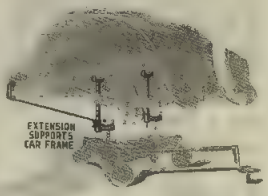
No. 9¼—Extra heavy; length of handle 34 inches; 1¼-inch screws; diameter of wheels 7 inches; lifting capacity 8,000 pounds; range of lift 9½ inches. Weight, each, 110 pounds. Each $24.00

All above, open stock.

Items marked thus ‡ shipped direct from factory.

JACK EXTENSIONS

For extra heavy auto twin jacks.



This body extension is designed to attach securely to the raising screws of the Weaver extra heavy auto twin jacks for the purpose of supporting an automobile from the frame bolsters, instead of from the axle.

Dismantled cars can be easily moved with the body supported in this manner. Either or both axles may be removed and the car rolled to an out-of-the-way place in the shop while the necessary repairs are being made upon the axles. No more cars propped up on boxes, obstructing the floor space in front of the work bench.

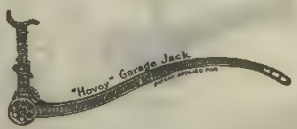
The extensions can be quickly attached and adjusted to fit any width frame from 24 to 36 inches. The height has a convenient pin adjustment with a range of from 18 to 40 inches.

No. 2436—The clamps are very strongly designed. The inside jaws of the clamps are threaded to fit snugly into the threads of the heavy jackscrews so as to prevent slipping. The clamps are securely tightened by heavy nuts. Shipping weight, 22 lbs. Per pair.....$9.00

Open stock.

GARAGE JACKS

Hovey.

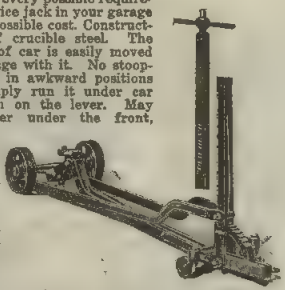


Operates on entirely new mechanical principles, namely the wheel and axle and the shifting fulcrum. Made of malleable iron and open hearth steel. Guaranteed to instantly jack up the wheel on any car. Operated by kicking up the head and depressing the handle. Locks by gravity; lets down by lifting handle. Handle is four feet long and made in two parts for convenience in shipping.

Hovey auto jack—Weight, each, 18 pounds. Each $15.00

GARAGE JACKS

Red Devil Dolly.



Reliable, simple and rapid in operation. Combines every possible requirement for a service jack in your garage at the lowest possible cost. Constructed entirely of crucible steel. The heaviest type of car is easily moved about the garage with it. No stooping under car in awkward positions necessary, simply run it under car and pull down on the lever. May be used either under the front, back or sides of car. Sets low with plenty of clearance, making it possible to operate under any height of axle or differential.

Red Devil Dolly—Size, 17 inches wide across, large wheels, 5 feet 2 inches long. Weight, each, 122 pounds. Each.....$50.00

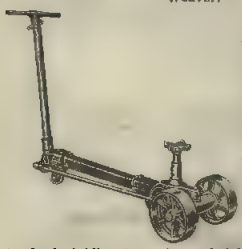
Red Devil Dolly—Same as above, equipped with rubber tires. Each.....$70.00

Red Devil Dolly—Equipped with wheels 5 inches wide. Each.....$55.00

Open stock.

NEW WAY JACKS

Weaver.

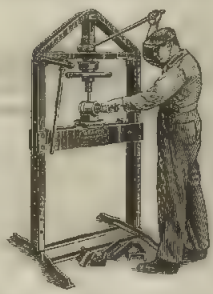


The New-Way Jack is an extremely compact, easily operated and efficient jack for lifting and transporting cars in the service station, repair shop and on the curb. The wheels are pivoted by means of the handle. The roller bearings which carry the weight of the load are located between the steel axle and axle housing instead of within the wheel hub. Sleeve supports standard rigidly at maximum height. The rear caster is securely held in place by a heavy bolt. The long body of the jack makes it easy to reach rear axle. Under crowded condtions the jack can be inserted from the side of the car. Handy for unloading cars. Ruggedness and simplicity are outstanding features of the construction of this jack. Every jack is carefully inspected and tested to lift its maximum recommended capacity, 5,000 pounds, before leaving factory. Should any part need replacement, the bolted construction permits this to be done in the shop without special tools. The rear caster is equipped with two sets of ball bearings and is securely clamped by a heavy bolt.

Model "B"—Weight, each, 100 pounds. Each....$36.00

GARAGE PRESSES

Weaver.



Every day in the average repair shop countless jobs arise which require the use of a press. The quicker, more efficient service this new Weaver Hi-Speed Press enables you to render will greatly increase your patronage and profits. To meet the demand for greater speed, especially on work that does not require extreme pressure, this new rack and pinion feature has been developed. This new feature, together with many others which have made the Weaver Press so popular with garage men in the past, all of which have been retained, we believe will make this new Weaver Hi-Speed Press the most efficient press for garage work on the market. Every mechanic will appreciate the great convenience and saving of time afforded by being able to complete the job, whatever pressure is required, without having to move it from a small arbor press to a heavier screw press, or vice versa, as is usually necessary. The rack and pinion is extremely efficient and simple in construction. The pinion to which the lever handle is attached meshes into a ratchet sleeve which envelopes the press screw. This sleeve is attached to the thrust bearing plate so that by operating the lever handle to the right, the hand wheel and screw are lowered as a unit. This construction avoids throwing undue strain on the screw which would occur if the pinion operated directly on the threads of the screw. A heavy tension spring counterbalances the weight of the hand wheel and screw and greatly facilitates operation of the lever handle. Heavy pressure up to 28 or 30 tons can readily be exerted on the work without changing its position by means of the ratchet lever and hand wheel.

Weaver Hi-Speed Press—32-inch width; weight, 460 pounds. Each.....$100 00

2836B

AUTO HOISTS

Single or Double Suspension—Safety—Worm Hoist—Ball and Roller Bearing Casters.

This is one of the most convenient and useful articles of garage equipment on the market. Note particularly the unobstructed span under the car, allowing ample room for two or more mechanics to work with absolute freedom.

The frame of the Weaver auto hoist is designed so as to permit the height of the arch to be increased approximately 12 inches, allowing the uprights to be raised to the desired height in the braces on either side, by means of the chain hoist. This increased height enables the hoist to raise the rear end of a limousine or a touring car with the top up, for removing the rear system.

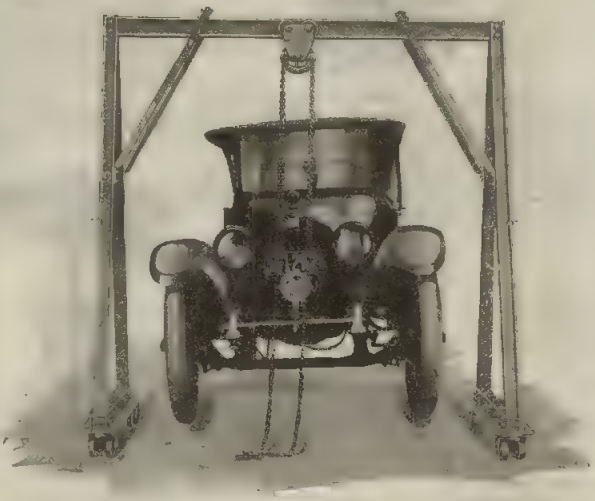
One chain of the hoist may be carried over the pulley in the center of the frame for performing work which can be handled to better advantage by a single suspension than by a double suspension from each corner of the frame as shown in preceding illustration.

The Weaver auto hoist is carried upon four ball and roller bearing casters, 5 inches in diameter, which permit it to be transported with perfect ease. The construction throughout is of steel, giving the greatest possible strength in comparison with its height.

Weaver auto hoist—Height, 8 to 9 feet. Weight, 500 pounds. Each $120.00

Open stock

The above illustration shows the "Union" all steel portable crane in operation. This outfit is the standard one-ton crane. The car shown is a large seven-passenger and weighs thirty-five hundred pounds. An equipment of this kind will not only cut your operating expenses, but will lighten the work and improve your shop conditions considerably. Crane is equipped with combined I-beam traveler and chain hoist. Traveler is furnished with steel roller bearings, and has a capacity of one ton. Also equipped with roller bearing casters, thereby assuring quick and easy handling. Takes only one man to operate this outfit. The crane can be furnished to handle any load up to six tons. Outfits over one ton equipped with triplex hoists.



Capacity	Height Over All	Length Over All	Clearance Under Rail	Width Over All	Weight Pounds	List Price Complete
‡No. 100—1-Ton.	8 ft.	7 ft. 9 in.	7 ft. 7 in.	3 ft.	400	$220.00
‡No. 100—2-Ton.	8 ft.	7 ft. 9 in.	7 ft 6 in.	4 ft.	700	500.00
‡No. 100—4-Ton.	8 ft.	7 ft. 9 in.	7 ft. 4 in.	4 ft. 6 in.	950	990.00
‡No. 100—6-Ton.	8 ft.	7 ft. 9 in.	7 ft. 2 in.	5 ft.	1,425	1,350.00

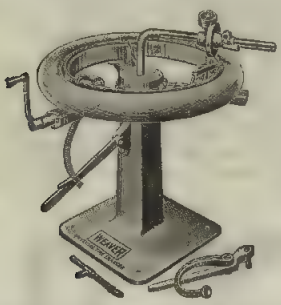
Items marked thus ‡ not carried in stock, but shipped direct from factory.

GARAGE EQUIPMENT

TIRE CHANGERS

Weaver.

The only mechanical means ever perfected for dismounting and remounting all styles and sizes of pneumatic automobile tires.



The Weaver universal tire changer will handle any size and style of auto tire or rim. The most difficult tires can be changed in a small fraction of the time required by the primitive methods usually employed.

The saving in time and labor will pay for the equipment in a very short time. The more prompt and efficient service which you will be able to give your trade will soon double your patronage.

No Injury to Tires.

Every operation in the handling of tires by this universal tire changer is done by means of smooth, polished rollers. There is positively no possibility of injuring either casing or tube even in the most stubborn cases. No pounding, no jamming, no cutting.

A few of the many applications of this tire changer are briefly suggested below:

To remove tire from quick detachable rim: Lower horizontal arm by means of lever so that large roller will be brought into contact with tire adapter ring with sufficient force to push it down and free from the lock ring. See Fig. 1. By then revolving arm around entire circumference of tire, adapter ring will relieve lock ring so that latter may be readily sprung off.

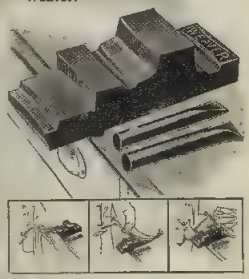
Printed directions accompany each machine give detailed suggestions for performing each operation on the various types of tires and rims.

Weaver—Shipping weight 275 pounds. Price, complete $58.00

One in a crate.

RIM ANVILS

Weaver.



Few jobs are as difficult to handle with the average garage equipment as the straightening of rim kinks. The Weaver rim anvil is the only device on the market that will take care of rims of every type and size. It consists of a solid block with a variety of grooves and faces which will accomodate rims of every knd in a vertical or horizontal position. It can be fastened to the work bench by a heavy bolt which passes through an opening in the anvil, with the forward position projecting over the bench. The flange on the bottom of the anvil forms a stop, insuring proper mounting. Made of one piece of solid gray iron. The two hand toods which are included with each anvil are made of high carbon steel.

Weaver—Shipping weight, each, 30 lbs. Each....$6.50

One in a box.

WIRE WHEEL REPAIR STANDS

Weaver.

This stand is properly modeled for facilitating replacing broken spokes, tightening loose spokes and properly aligning and truing the wheel. With this equipment any tire repair man can repair wire wheels. The secret of this equipment is that it is made in such a manner as to permit the wheel to be held securely in position by a cone bearing contact with the machined surface of the interior of the hub. As shown in the illustration, an adjustable indicator is provided for the purpose of revealing the slightest variation in the rim. There is a convenient revolving cabinet on the center standard of the stand that will accommodate a great variety of spare spokes, where they are held within reach of the operator.

Weaver Wire Wheel Repair Stand—The main standard is heavy steel tubing supported by a broad iron base, which gives ample foundation for handling the heaviest wheel. A tool tray carried directly under the wheel keeps the necessary wrenches, etc., within reach. Shipping weight complete, approximately 60 pounds. Price $30.00

WEAVER GARAGE EQUIPMENT

HI-LIFT JACK

Weaver Hi-Lift Jack—Weight, 200 lbs..... Each $100.00

The Weaver Hi-Lift Jack offers an extreme range of lift which enables the mechanic to work comfortably and efficiently under the car.

The saddle of the jack can be lowered to a minimum height of 7 inches and permits the lift to be applied to the frame bolster of the car in spite of low running boards, gas tanks, etc.

The jack can be used to advantage to take the weight of the body off the springs, when lubricating springs, replacing broken leaves and worn shackle bolts, attaching shock absorbers, etc.

Jack is strongly built of steel and malleable iron. Lifting capacity, 3000 pounds. Maximum width, 40 inches; ample to straddle the largest truck wheel and narrow enough to go between the front or rear wheels of any car.

AUTO TWIN JACK

Garage Size—Metal Wheels.. ..... Each $35.00
Garage Size—Rubber Tired ..... Each 50.00
Small Car Size—Metal Wheels. ..... Each 22.50

	Garage Size	Small Car Size
Shipping weight (each), lbs.	100	50
Rubber tired, lbs.	100	50
Lifting capacity, lbs.	3000	4000
Diameter of wheels, in.	6¾	4¼
Length of handle, in.	40	34
Diameter of screw, in.	1¼	1⅞

An extremely efficient general utility jack designed to save time, labor and space in handling complete and dismantled cars in the garage, repair shop, wash room, auto livery, etc., and in loading and unloading automobiles

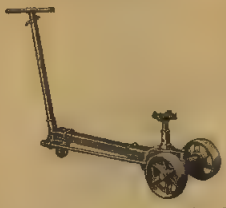
When applied to the car this jack takes up no more room than the car itself and thus it can be manipulated in a very limited space With one of these jacks under each axle, the car can be pushed directly sideways or turned completely around within its own length. As it can be used anywhere in the garage it is preferable to a turn table.

The Weaver Twin Jack will fit both front and rear axles. Extension blocks, so designed as not to interfere with truss rods, are furnished to reach unusually high axles.

The dependable screw hoisting mechanism, broad base and two-point support provide a safe foundation and insure the safety of the mechanic while working under the car.

Ruggedly constructed of high carbon steel and malleable iron for hard service. Caster sockets equipped with two sets of steel balls and wheels with roller bearings. Large wheels facilitate moving heavy loads over rough floors. Extension crank handle makes it easy to place and hold jack in position while elevating screws

NEW-WAY JACK



Model B—With Steel Wheels. Weight, 100 lbs Each $50.00
Model B—With Rubber Tires. Weight, 100 lbs. Each 75 00

The Weaver New-Way Jack, Model B, is an extremely compact, easily operated and efficient jack for lifting and transporting cars in service station, repair shop or on the curb.

An important and exclusive feature lies in the fact that the wheels can be pivoted by turning the handle, enabling the operator to guide the jack quickly and accurately under the car in a limited space as well as guide the car while transporting it on the jack.

The telescoping standard provides a range of lift from 8 to 17½ inches, low enough to be inserted under lowest axle and high enough to reach high truck axles. When drawn up, ratchet standard is firmly supported by sleeves, preventing any tendency to bind.

Jack operates on ratchet principle and will lift burdens up to 5000 pounds with ease. Load lowered quickly and easily by tripping latch under handle and reversing action of the handle

AUTO AMBULANCE

Model C—Rubber Tired Weight, 265 lbs.. Each $120.00
Model C—Steel Tired Weight, 195 lbs. Each 80 00

Strength and simplicity of design and application are outstanding features of this equipment. The wide, cast steel yoke provides a two-point support for car axle, 18¼ inches between centers. This and the extremely wide tread (28 inches between centers of tires) support car rigidly and prevent tipping on rough roads

The ambulance can readily be applied to front or rear axle of any car. In applying to front axle car axle rests in crotches of the yoke and can be clamped in position by heavy chains In applying to rear axle the yoke straddles the differential and overhanging forks permit rear axle to rest in crotches without truss rod interfering

Heavy telescoping tongue is adjustable from 7 feet to 12 feet and can readily be detached for carrying ambulance in service car. Friction is reduced to a minimum and ease of operation greatly increased by two sets of heavy roller bearings between one piece axle and housing and thrust bearings between end of frame and hub on each side Regularly equipped with solid rubber tires, 3½x16 inches. Cast steel wheels on special order.

WEAVER GARAGE EQUIPMENT

TIRE SPREADER

Weaver Tire Spreader—Floor space, 24x30 in. Weight, 60 lbs. ..... Each $35.00

The Weaver Tire Spreader is designed to spread casings for inspection and to hold casing spread while being repaired. It is practically indispensable in a shop handling tire repairs. In addition to saving time and labor on repair work, the spreader will prove a source of additional revenue, by enabling the customer to see with his own eyes the condition of the interior of his casing, which will often lead to the sale of a new tire instead of a patch on the tube.

The spreader is extremely simple and quick in operation. The casing is placed on the spreader with the hooks of the spreader jaws over the beads. Pressure on the foot lever draws these hooks and with them the rollers downward and spreads casing over buffing plate.

When foot lever is released the casing resumes its original shape with hooks of spreader still in position over beads. Casing can then be revolved and another portion inspected.

When break is located, casing is inserted under the four hooks of detachable buffing plate and casing thus permanently spread, can be removed for buffing and stripping.

Spreader will support heaviest passenger car tires without danger of overturning and does not need to be bolted to the floor. It can thus be moved wherever desired. A hand tool is supplied to handle extra heavy casings.

UNIVERSAL TIRE CHANGER

Model E—Weight, 260 lbs. ..... Each $85.00

The new Model E Weaver Universal Tire Changer has been developed to meet the demand for a quick, safe and convenient means for changing tires not only on all types of split and solid detachable rims but also on wire and disc wheels. It will handle pneumatic tires, including the new balloon tires up to and including 7½ in., for both passenger cars and light trucks.

This remarkable machine is within reach of every tire repair shop and garage, because it will pay for itself within a few months' time not only by saving time and labor, but also by attracting new customers who appreciate having their tires and rims handled in a way that precludes possibility of damage.

TOWING POLE

Model D—Shipping weight, 47 lbs. ..... Each $22.50

The new Weaver Towing Pole, Model D, is designed to handle towing work far more quickly and efficiently and without danger of accident.

Special attention is called to the two jaw clamps and hooks which fasten into them. The two clamps enable the pole to be rigidly clamped to front or rear of any car.

The two blocks form simple and effective universal joints which allow ample play in any direction when turning corners, towing over rough roads, etc. They cannot become unhooked in towing when both are fastened.

Heavy coil springs absorb the strain of quickly starting and stopping and in towing over rough roads.

Pole is of double strength steel tubing in two sections, one telescoping within the other. Length adjustable from 5 ft. 6 in. to 8 ft.

AUTO HOIST

Single or Double Suspension—Worm Hoist—Ball and Roller Bearing Casters

Weaver Auto Hoist—Shipping weight, 575 lbs. ..... Each $175.00

One of the most convenient and useful articles of garage equipment on the market. Note particularly the unobstructed space under the car, allowing ample room for two or more mechanics to work with absolute freedom.

The peculiar design of this Hoist permits it to be operated in very cramped quarters. It can be run into position over a car in a crowded shop without requiring more than 12 to 14 inches space on either side of the car.

The frame is designed so as to permit the height of the arch to be increased approximately 12 inches, allowing the uprights to be raised to the desired height in the braces on either side, by means of the chain hoist. This increased height enables the Hoist to raise the rear end of a limousine or a touring car with the top up, for removing the rear system.

One chain of the Hoist may be carried over the pulley in the center of the frame for performing work which can be handled to better advantage by a single suspension than by a double suspension from each corner of the frame, as shown in illustration.

Each chain before being mounted in the Hoist is subjected to an individual test.

The hoisting mechanism is operated by worm drive, which is absolutely safe and positive. There are no gears nor ratchets to slip or break and allow the load to fall.

Weaver Auto Hoist is carried upon four ball and roller bearing casters 5 inches in diameter. The construction throughout is of steel, giving the greatest possible strength in comparison with its height. Height, 8 feet to 9 feet.

WESTERN ELECTRIC COMPANY

INCORPORATED

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SAN FRANCISCO
SAVANNAH
SEATTLE
SPOKANE
SYRACUSE
TACOMA
YOUNGSTOWN

Equipment for Every Electrical Need

Western Electric

Mine Telephones

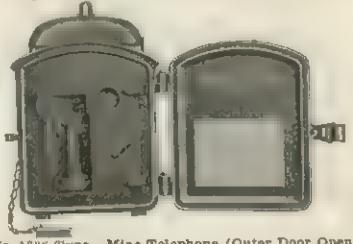
The Modern Mine Telephone as made by the Western Electric Company fulfills the requirements for a telephone fully protected against the rigors of mine service.

Electrically, Western Electric Mine Telephones contain practically the same apparatus as ordinary magneto telephones designed for service on heavily loaded lines. However, the mechanical features are entirely different as each part is specially treated to resist moisture, rust and gases.

No. 1336 Type. Mine Telephone (Closed).

All apparatus is mounted in a substantial cast iron case finished with a rust resisting enamel. A double door construction is used. The outer door protects the receiver and generator crank from mechanical injury. An inner door prevents the apparatus from being tampered with by unauthorized persons.

Experience has shown that moisture will condense on the inside surfaces of Mine Telephones and that it will cause damage, if the water is confined within the set. In the Western Electric Mine Telephone, no gaskets, stuffing boxes, etc., are employed in an attempt to obtain "air tight" construction, but on the other hand small openings are provided so that air may circulate through the telephone and allow condensed moisture to drain off. Every piece of apparatus and part employed in these telephones are thoroughly treated to resist the action of moisture and fumes. For example, the induction coil is impregnated with a moisture proof compound and, in addition, is actually embedded in compound and protected with a small case. All other parts are correspondingly well treated so that they cannot be damaged by moisture.



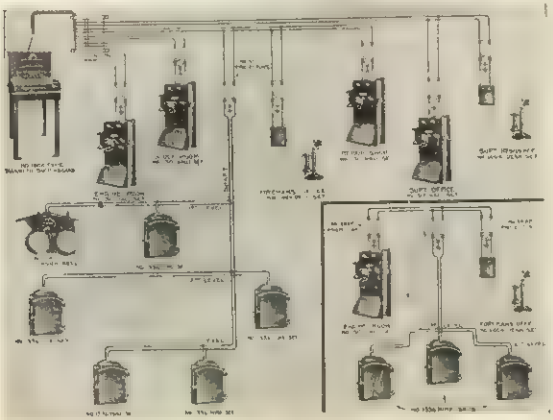
No. 1336 Type. Mine Telephone (Outer Door Open).

In addition to treating the various pieces of apparatus, the telephone is so arranged that the terminals of the apparatus will not be short-circuited even though wet. This is accomplished by embedding the apparatus terminals in compound or otherwise protecting them, and by the use of wiring impervious to moisture. This is of stranded copper wire heavily covered with the highest grade of rubber insulation.

To prevent leakage of current from the dry cells, each Mine Telephone is equipped with two dry cell cartons impregnated with moisture proofing compound. These are to be used in place of the regular cartons furnished on standard dry cells.

These telephones are equipped with wrought iron mounting bars having "pear" shaped mounting below. This permits of their being mounted by one man, as the mounting screws may first be driven into place and the telephones then hung upon them.

We can supply Mine Despatching Systems or Complete Mine Telephone Systems. Write us for information.



Typical Diagram Showing Method of Connecting Telephones to a Switchboard.

Typical Party Line, Mine Telephone System.

FEDERAL ELECTRIC COMPANY

8700 South State Street, CHICAGO

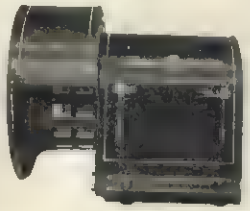
Langredan & Powell Sts., Oakland, Cal. 130 W. 42nd Street, New York

Branches in All Large Cities

Product

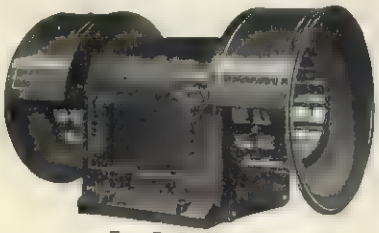
Electric Siren Whistle.

Type B siren is the ideal fire alarm signal or "start and stop" signal. It gives a weird penetrating screech that can be heard for miles around and cannot be mistaken for any other signal.



Type B—Single Head

Type B, double head siren, makes double the volume of sound.



Type B—Double Head

Type A siren is for use in factories, mines, etc., as a call signal.

Type A

We advise the installation of sirens to a 220 volt circuit, two or three-phase alternating current or direct current, wherever this current is available. A 220 volt circuit is kept up to the required voltage better than the 110 volt lighting circuit.

Special Motor

The above sirens with alternating current motors are for standard 60 cycle frequency. Sirens for other frequencies, such as 25 to 45 or 75 to 133 cycles, require special motors with gear connections to siren to get required speed.

Write for Special Price.

Construction

All sirens are constructed for outdoor service. Every part is thoroughly enclosed and absolutely damp and weatherproof. The motors are entirely covered by a heavy galvanized sheet iron hood. The rotor is made from heavy cast aluminum. The base is cast iron. The horn ends, also slot openings, are covered over with ¼" mesh, galvanized wire screen.

DETAILS AS TO CONSTRUCTION, ETC.

Type	Class of Current	Motor H. P.
Single Head...	Single phase, 60 cycle, alternating current, 110 or 220 volts.....	2½ H P
Single Head...	Two or three phase, alternating current, 110, 220, 440, 550 volts	2½ H P
Single Head . Double Head .	Direct current 110, to 600 volts	2½ H P
	Single phase 60 cycle, alternating current, 110 or 220 volts.....	5 H. P
Double Head...	Two or three phase, alternating current, 110, 220, 440, 550 volts	5 H. P
Double Head...	Direct current any particular voltage from 110 up to 600 volts..	5 H. P
Type "A".....	Universal Motor, either A. C. or D. C. 2 volts up to 250 volts	¼ H. P

All Sirens operate at a speed of 3,500 R. P. M. except Type A, which operates at 10,000 R. P. M.

Lubrication

Each siren is shipped out with just enough oil in the vats so that it will not spill all over the commutator in transit. After a siren is installed for permanent use, the vats should be filled. For mine use these sirens do not have to be oiled more than once a month. For lighthouse work or other continuous duty, they will require more frequent oiling. Good clear machine oil should be used.

Finish

Each and every apparatus is painted with three heavy coats of paint, the last coat is a bright red enamel and nicely striped in black.

Guarantee

We guarantee each siren for a period of ONE YEAR from date of purchase.

Installation

Instructions for mounting and wiring are sent when the siren is shipped including a wiring diagram enabling any electrician to do the work right.

Remote Control Switch

(See illustration at left)

The use of this device permits the Siren being operated from distant locations such as central telephone office, engine room, tipple, pumping station, etc. It consists of a suitable magnet operated circuit breaker and two momentary contact push button switches.

General Alarm Control

(See illustration at right)

The purpose of this control is to perform the on and off contact operation automatically, in place of the manually operated knife switch.

Special Coding Siren

We can equip either of our single head or double head Type B Sirens with special motor and special switching device complete so that they can be used to give short signals. Additional cost. Write for prices.

(1) Weatherproof steel case. (2) Belt drive from motor or direct connected if desired. (3) Worm gear reduction. (4) 1/20 H. P. motor, in any class current up to 440 volts

Brandes

$10.

Table-Talker

The soft sweet strains of a violin, the thundering volume of an organ and the warbling notes of a soprano all come from Brandes Table-Talker with trueness and full volume.

The Table Talker was designed by the makers of the famous Brandes Matched Tone Headsets to meet the need for a simple radio loud speaking device to entertain a group of people in an average size room.

Its mellow tones and full volume are characteristic of the quality and manufacturing experience built into it. Every detail has been given special consideration.

The finish is a beautiful neutral shade of deep brown which harmonizes perfectly with artistic home furnishings.

The base is felt padded to protect polished furniture. **No. 500**—Brandes Table-Talker complete with polarity-indicating cord. Each.....$10.00

MOON LOUD SPEAKER

In order to get the very best results from the Moon Loud Speaker it has been found that an increase of the "B" Battery voltage on the amplifier is necessary.

After adjusting the head-set to the Loud Speaker it is never necessary to touch them. Merely move the trumpet in its socket in the direction desired. Best results are obtained if trumpet is kept reasonably loose in socket.

Vibration is done away with by the use of heavy metal sound channels. These heavy casting besides acting as a check to vibration also give weight and balance to the base of the Speaker making it easy to handle and operate.

In this case of handling sound, hundreds of early experiments showed that those two opposing sound waves must be gently manoeuvred into a single channel and then enlarged in order to give perfect results.

The Moon Sound Distributor with its scientifically adjusted curves gives **just this action** with the result that tones leave the bell of the trumpet full clear and round.

No expense has been spared in making this Moon Loud Speaker a powerful piece of mechanism. Metal and accessories have been crowded into it in a most liberal fashion.

As a beautiful, handsomely finished article it stands all alone in the Loud Speaking field. Made of thick hard aluminum, it is spun and worked over like a piece of silverware. A real decoration to any home. Its heavily weighted sound channels are encased in a heavy gauge aluminum chamber perfectly balanced for ease in handling.

The picture shows you its niceties of design, its gently swelling trumpet, its full rounded bell opening.
Moon Radio Phone—Each.....$7.50

No. 2-A Current Supply Set.

The Western Electric No. 2-A Current Supply Set meets the demand for a simple and convenient source of current supply for the Western Electric No. 10-A Loud Speaking Telephone Outfit. It is a combination tranformer and rectifier. When connected to a 110 volt, 60 cycle alternating current lighting circuit, current at the required voltage for the filament and plate circuits of the vacuum tubes will be supplied.

It makes unnecessary the storage battery and the dry battery which usually furnish this current. This does away with the inconvenience and expense of charging the storage battery and the expense of renewing the dry battery. The set is very economical in operation. When used two hours a day its first cost and operation for one year is appreciably less than the battery cost under the same conditions. In addition, it eliminates any possibility of damage to furnishings by electrolite leaking from storage batteries.

DESCRIPTION

The No. 2-A Current Supply Set is contained in a black japanned iron case 10 inches x 6 inches x 5½ inches. The essential elements are:

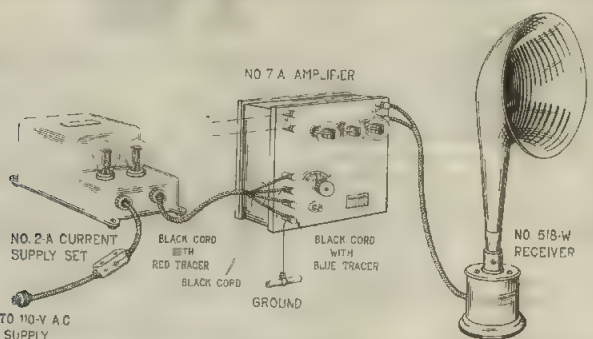
Transformer Filter Conneting Cords, Plug and Switch. Rectifier Tubes and Sockets.

CONNECTIONS

The No. 2-A Current Supply Set is provided with cords for making the proper connections as follows:

The two-conductor six-foot cord, equipped with a feed through switch and attachment plug, is used to connect the Set to the house lighting circuit.

The four conductor six-foot cord equipped with cord tips provide a means of connection to the binding posts tips provides a means of connection to the binding posts of No. 10-A Loud Speaking Telephone Outfit shown on page 2969.



In setting up the outfit connect the four-conductor cord to the No. 7-A Amplifier as follows:

Caution—Be sure to follow instructions carefully as a wrong connection may result in burning out the filaments of the amplifier tubes.

Connect the **Black Cord with the Red Tracer** to the binding post on the No. 7-A Amplifier marked "+120."

Connect one of the **All Black Cords** to the binding post on the No. 7-A Amplifier marked "+6" and the other to "—6."

Connect the **Black Cord with the Blue Tracer** to the binding post on the No. 7-A Amplifier marked "G."

Then screw the plug of the two-conductor cord into the 110-volt electric light socket and operate the gray button of the switch in the cord The filaments of both rectifier tubes of the Current Supply Set will now light up. By operating the filament switch of the No. 7 A Amplifier the three vacuum tubes of the amplifier will also glow.

Note—When the No. 10-A Loud Speaking Telephone Outfit is not in use, the current supply can be cut off by operating the black button of the switch in the cord. In this case it will be unnecessary to unscrew the plug from the lighting socket or to open the switch in the No. 7-A Amplifier.

No. 2-A—Current Supply Set. Each..... **$75.00**

WINCHESTER

HAMMERLESS REPEATING

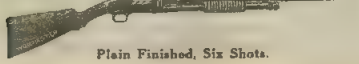
MODEL 1912 TAKE-DOWN

The Winchester Model 1912 hammerless Take-Down repeater is made in 12, 16 and 20 gauges. On account of its safety, strength, lightness and balance, the ease and sureness of its operation, the beauty of its lines, and the mechanical correctness of its design, the Model 1912 has been classed by critical experts **the most perfect repeater.**

Balance has been successfully embodied in the Model 1912. Its weight is properly distributed, the result being that it feels right and comes up right. To aid in catching the sights readily, the receiver is matted on top along the line of sight.

In order to make this gun light without the sacrifice of strength, nickel steel, which has about double the strength of the steel generally used in other makes of similar guns is used in the barrel, the receiver, and all working parts, except the springs. The latter are made of high tension spring wire, which is not likely to break or take on a permanent set from use. The receiver is one piece and is solid and entirely closed at the rear—not simply on the top. No screws or pins extend through the walls of the receiver, which fact is an added factor for strength and sightliness. The breech-bolt is short and solid; not long and jointed. It has no joints to wear, and it will not buckle or get out of alignment. The smoothness of its action and the ease with which it can be loaded and unloaded have called forth much favorable comment from shooters. The magazine holds five shells which, with the one shell that can be placed in the chamber, makes it a six-shot gun. The shells are loaded into the magazine through the bottom of the receiver—one after another being pressed against the carrier and forward into the magazine. The action is then operated by pressing upward the action slide lock, and drawing the action slide handle backward and forward. This cocks the gun, throws a loaded shell into the chamber, and leaves the gun ready for firing. It is not necessary to release manually the action slide lock when shooting the gun, as the recoil does this automatically.

The trigger lock operates crosswise, which makes it impossible for it to be jarred out of place by the recoil. It is conveniently located in the outside front end of the guard, so that it can be readily operated. The position of the lock is quickly told by sight or feeling. When the lock is off and the trigger can be pulled, the lock shows a red band of warning. Its position is such that the finger in operating it does not have to come in close proximity to the trigger, and, being outside the trigger guard, it cannot injure the trigger finger in shooting.



Plain Finished, Six Shots.

Barrel—Nickel steel, full choke bore, chambered for 2¾-inch shells.

Stock—Pistol grip stock and action slide handle of plain walnut, not checked, rubber butt plate. Length 13¾ inches, drop at comb 1 11-16 inches, drop at heel 2½ in.

Weight—About 7¼ pounds.

No. 1212—12 gauge, 28, 30 or 32-inch barrel. Each $54.25

No. 1212R—With raised matted rib, otherwise same as above. Each 63.25

Plain Finished, Six Shots.

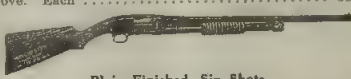
Barrel—Nickel steel, full choke bore, chambered for 2 9-16 inch shells.

Stock—Pistol grip stock and action slide handle of plain walnut, not checked, rubber butt plate. Length 13⅝ inches, drop at comb 1⅛ inches, drop at heel 2½ inches.

Weight—About 6 pounds.

No. 1216—16 gauge, 26-inch barrel. Each $54.25

No. 1216R—With raised matted rib, otherwise same as above. Each 63.25



Plain Finished, Six Shots.

Barrel—Nickel steel, full choke bore, chambered for 2½-inch shells.

Stock—Same as on 16 gauge.

Weight—About 5¾ pounds.

No. 1220—20 gauge, 25-inch barrel. Each $54.25

No. 1220R—With raised matted rib, otherwise same as above. Each 63.25

Modified choke on cylinder bore barrels will be furnished in 12, 16 or 20 gauge without extra charge if so ordered.

Trap—Fancy Finished, Six Shots.

Barrel—Nickel steel, full choke bore with raised matted rib, chambered for 2¾-inch shells.

Stock—Selected fancy walnut, hand-made, oil-finished, pistol grip, checked, rubber butt plate. Action slide handle fancy walnut, oil-finished, checked. Length of pull 13⅝ inches, drop at comb 1 9-16 inches, drop at heel 1⅞ inches. The stock has the popular full comb and small well-rounded grip.

Weight—About 7½ pounds.

No. 1212TR—12 gauge, 30-inch barrel with raised matted rib. Each $91.25

No. 1216TR—16 gauge, 26-inch barrel with raised matted rib; chambered for 2 9-16 inch shells. Weight, about 6¾ pounds. Each 91.25

No. 1220TR—20 gauge, 25-inch barrel with raised matted rib; chambered for 2½-inch shells. Weight, about 6 pounds. Each 91.25

WINCHESTER

REPEATING

MODEL 1897, TAKE-DOWN

Tournament—Specially Designed for Trap Shooting.

The Tournament gun is the popular and widely used Winchester Model 1897, 12 gauge, Take-Down repeating shotgun, made according to specifications which will meet the requirements of the most exacting trap-shooters. In this new gun are embodied features which years of experience in making guns for the leading trap shots in the world have proven to be of great assistance in making high scores. They embrace strong and even shooting qualities, balance; and length, drop and shape of stock.

The finish of the working parts and of the exterior of the gun is equal if not superior to that found on many much more expensive arms.

Fancy Finished, Six Shots.

Barrel—Celebrated Winchester, rolled steel. Handsomely matted on the top, and bored to shoot a close, even pattern with any trap load.

Stock—Made of handsome selected walnut and has a well-shaped straight grip which is checked, and a rubber butt plate. Dark, rich oil finish. Length of pull 14 inches, drop at comb 1¾ inches, drop at heel 1⅞ inches. The comb is heavy and rounding, which is a great help to quick and accurate shooting, as it minimizes cross-sighting. The action slide handle is made of selected walnut, finished to harmonize with the stock, and checked.

Weight—About 7½ pounds.

No. 9712DTR—12 gauge, 30-inch barrel. Each..$75.50

One in a box.

SELF-LOADING

MODEL 1911, TAKE DOWN

The Winchester self-loading shotgun is a recoil operated, hammerless, take-down, five-shot repeater. The recoil developed by the discharge of the gun cocks the hammer, ejects the fired shell, feeds a loaded shell from the magazine into the chamber and leaves the gun ready to be shot again. As the trigger must be pulled for each shot fired, the gun is at all times as completely under the control of the user as any double or single barreled gun. The loading and shooting of this gun being governed by the trigger finger, it has been aptly called the Trigger Controlled Repeater. Although wonderful in operation, the Winchester self-loading shotgun is neither complicated, cumbersome nor apt to get out of order with any reasonable use. The design and operation of the gun are mechanically correct, and the parts, which are few and strong, are made of the very best materials, and are tested and inspected with great care before being assembled. In shooting quality, grace of outline, balance and in those many other details which go to make up a good gun, this new model keeps pace with the established high Winchester standard.

Plain Finished, Five Shots.

Barrel—Nickel steel, full choke bored, chambered for 2¾-inch shells.

Stock—Handsomely finished pistol grip stock, 13¾ inches long, drop at comb 1⅝ inches, drop at heel 2⅝ inches. Rubber butt plate. Plain wood forearm. Not checked.

Weight—About 7¾ pounds.

No. 1112TD—12 gauge, 26 and 28 inch barrel. Each $61.50

One in a box.

Trap. Fancy Finished, Five Shots.

Barrel—Nickel steel, matted, full choke bored, chambered for 2¾-inch shells.

Stock—Selected fancy hand-made oil-finished stock with straight or pistol grip, checked, and checked rubber butt plate. Forearm is made of selected fancy wood and handsomely checked. Standard style of stock is 13⅞ inches long with 1⅝ inches drop at comb, and 2⅝ inches drop at heel. As this stock is hand-made, length or drop desired will be furnished up to 3¾ inches at heel and 1¾ inches at comb, without extra charge.

Weight—About 7¾ pounds.

‡No. 1112TDT—12 gauge, 26-inch barrel Each.$114.50

One in a box.

Pigeon. Fancy Finished, Five Shots.

This gun is made according to the same specifications as the trap gun, but in addition, the frame is elaborately engraved.

‡No. 1112TDP—12 gauge, 26-inch barrel. Each.$249.50

One in a box.

Items marked thus ‡ not carried in stock.
Shipped direct from factory only.

WINCHESTER

HAMMERLESS REPEATING

MODEL 1912 TAKE-DOWN

‡**Trap Grade Interchangeable Barrels**—Nickel steel, full or modified choke, or cylinder bore, can be furnished in **12, 16** or **20 gauge.** Raised matted rib or matted barrel with magazine and fancy walnut action slide handle, checked. Price additional..... $...

Pigeon—Handsomely Finished, Six Shots.

This gun is beautifully and elaborately engraved, and finished with especial care; is made according to the same specifications as the trap gun, except the length of barrel.

No. 1212P—12 gauge, 28-inch barrel. Weight, about 7½ pounds. Each.....$197.00

One in a box.

‡**Pigeon Grade Interchangeable Barrel**—Nickel steel, full or modified choke or cylinder bore with magazine, and selected walnut action slide handle, checked. Price additional ..... $

Note—A gun with an action of one gauge cannot be fitted with an interchangeable barrel of a different gauge. In all cases, extra barrels will have to be fitted at the Winchester armory.

Tournament—Fancy Finished, Six Shots.

The dimensions of this gun have been worked out with a great deal of care, to make the gun fit the average trap shooter's requirements and, therefore, handle well.

Barrel—Nickel steel, full choke bore, with raised matted rib.

Stock—Handsome selected walnut, oil-finished, with well-shaped straight grip, checked; rubber butt plate. Action slide handle of selected walnut, checked. The length of pull is 14 inches, drop at comb 1 9-16 inches, drop at heel 1⅝ inches. The comb is heavy and rounding, which is a help to quick and accurate shooting and also minimizes cross-shooting.

Weight—About 7½ pounds.

‡**No. 1212TO—12 gauge,** 30-inch barrel. Each..$32 25

‡**Tournament Grade Interchangeable Barrels**—Nickel steel, full or modified choke or cylinder bore, with magazine and selected walnut action slide handle, checked. Price additional .....$.....

Tournament.

Ventilated Rib.

This gun is a perfection of the Model 1912. It has balance, fit, accuracy and splendid functioning. It is a response for a high grade gun with a practical rib which will overcome the heat mirage due to steady shooting. This rib bridges the area of heat waves and is raised above the barrel to the correct elevation. Construction is such that expansion and contraction due to temperature changes will not cause it to take a permanent set mechanically locked to the barrel; not soldered or brazed on. The matted surface forms a sighting surface which eliminates the glare. Can be obtained with a special designed action slide handle to meet the needs of shooters who like a handle which allows varying positions of the extended arm.

BARREL—Nickel steel, full choke.

STOCK—Full checkered piston grip. Length of pull is 14 inches, drop at comb 1⅝ inches and at heel 1⅞ inches. Each gun is furnished with a high quality soft rubber recoil pad.

WEIGHT—About 8 pounds.

No. 1212TOVR—12 gauge, 30-inch barrel. Each..$154.25

No. 1212TOVR—12 gauge, 30-inch barrel with extension slide handle. Each.....$165.00

Trap.

No. 1212TVR—12 gauge, 30-inch barrel. Each..$164.00

No. 1212TVR—12 gauge, 30-inch barrel with extension slide handle. Each.....$181.25

Pigeon.

No. 1212PVR—12 gauge, 30-inch barrel with extension action slide handle. Each.....$260.00

SINGLE SHOT

20 GAUGE, SOLID FRAME AND TAKE-DOWN

The construction of the new Winchester single shot 20 gauge shotgun is the same as that of the Winchester single shot rifle, having the old reliable Sharp's breech-bolt and lever. This is a very simple and strong form of construction and one that gives a light and easy action. The opening movement of the lever automatically withdraws the firing pin and draws down the bolt, leaving the breech clear. The closing movement of the lever brings up the breech-bolt and locks it in place, but leaves the hammer in a locked position at half cock. To fire the gun, the hammer must be brought to full cock by hand. When the gun is open, the barrel can be examined or cleaned from the breech. The take-down gun has the simplest kind of take-down device, it being only necessary to push forward the take-down lock, drop the lever and give the barrel a quarter turn, when the gun comes apart. Length over all is 41¾ inches.

Solid Frame.

Barrel—Nickel steel, full choke bore, chambered for 3 inches in length and under.

Stock—Straight grip stock and forearm of plain walnut and is fitted with rubber butt plate. The receiver is matted on top along the line of sight. Length of stock 13⅞ inches, drop at comb 1⅞ inches, drop at heel 2⅛ inches.

Weight—About 5½ pounds.

No. 20SSS—20 gauge, 26-inch barrel. Each....$25.00

One in a box.

Take-Down.

The same specifications given the solid frame gun will apply on the take-down.

No. 20SST—20 gauge, 26-inch barrel. Weight, each, 5¾ pounds Each.....$31.00

SHOTGUNS

Remington UMC

HAMMERLESS REPEATING

MODEL NO. 10, TAKE-DOWN PUMP ACTION

It is interesting to note that the things that sportsmen comment upon, and which lead them to prefer the Remington-UMC to all others, are exclusive Remington-UMC features.

The famous Remington-UMC **Solid Breech** has no openings at top or sides—no chance for dirt, snow and rain to get in and gum up the works.

Another special feature of even greater importance is the fact that the receiver is **absolutely solid** in the rear. This means that the breech block does **not** slide out. The practical benefits are that powder and gases go **down**—away from the face. No chance of a blow-back due to defective primers, grease, etc.

Shells are loaded and ejected through an opening in the **bottom** of the receiver—**away** from the face and not interfering with your aim.

Its safety is largely due to the fact that it is **hammerless**—a feature that also adds much to the beauty and appearance of the gun.

The remarkably easy handling and balance of the Remington-UMC repeating shotgun are due to the grip of stock being more nearly in line with the barrel—made possible because there is **nothing to slide back.**

The only outside part that moves is the slide handle or forearm.

The firing-hammer travels but ⅛ of an inch **in a direct line**—giving this model its much-talked-about **fast** firing action.

Breech Block.

The locking of breech block and support against recoil shoulder is directly in line with the thrust of recoil, affording great strength to withstand heavy loads.

Recoil Lock.

The recoil lock prevents the shooter's backward pull on the forearm from opening the gun until released by the recoil of the exploded cartridge, thus preventing liability of accident from hang fires.

Safety Devices.

The trigger is out of contact with the sear; the action bar blocks the firing pin; the face of the breech block is not in contact with the cartridge head and the recoil lock or action bar lock locks the sear in the cocking notch in the firing pin until the gun is completely closed. Any one of these devices would be sufficient to prevent the explosion of a shell until the breech is fully locked.

A convenient safety slide in the trigger guard is provided, arranged so as to necessitate taking the finger out of the guard in order to move it to the safe position, thus preventing the possibility of pulling the trigger when adjusting the safety slide. An indicator button on the right side of frame projects when the gun is cocked and in firing position, and returns to a position flush with the side of the frame when the firing pin is down or the mechanism not fully locked.

Operation.

The loaded shells being supported on all sides, will not become crossed on the carrier or drop out of the gun during the loading movement. The operation is smooth and positive, permitting great rapidity of fire.

Take-Down.

The take-down device is simple and attractive in appearance. It permits of the detachment of the magazine and barrel from the receiver without the aid of tools of any kind, and is arranged so that the slide-handle may be locked forward when placing the detached barrel and magazine in case, thus preventing the accidental jamming or bending of the action bar. The barrel is threaded with strong, square threads; not liable to be crossed by careless handling. One-quarter turn only is required to attach barrel to receiver. The take-down feature not only permits the shooter to clean and carry this gun with ease, but also allows the action to be fitted with interchangeable barrels of different lengths and styles of bore.

Adjustment.

The adjustment bushing in the receiver is arranged to take up any looseness which might develop from wear. We guarantee that the gun will never shoot so loose that this adjustment will not take up all wear.

Standard Grade, Six Shots.

Barrel—Remington steel, full choke.

Stock—Half pistol grip stock and forearm of American walnut. Length of stock 13¾ inches, drop at comb 1⅝ inches, drop at heel 2¾ inches. Rubber butt plate.

Weight—About 7½ pounds.

No. 10A—**12 gauge, 28, 30 or 32-inch barrel.** Each $52.50

No. 10AR—With raised matted rib, otherwise same as above. Each 62.10

No. 10A Brush—**12 gauge,** with 26-inch cylinder bored barrel. Each 52.50

One in a box.

Special Grade, Six Shots.

Same as No. 10A standard grade with the exception that the stock and forearm are of selected imported walnut, half pistol grip and forearm are neatly checked.

No. 10B—**12 gauge,** 30-inch barrel. Each $85.00

One in a box.

Items marked thus ‡ not carried in stock; shipped direct from factory.

Winslow Government Standard Scale Works, Inc.

Established 1896

TERRE HAUTE, INDIANA

Heavy Capacity Scales

Products

We make all sizes of heavy scales, 1 to 400 tons capacity. Railroad track scales in many lengths of platform. Motor Truck scales all sizes.

Mine Scales suitable for all conditions.

Construction

We use roller bearings to protect knife edges from shock and wear, thus insuring long life.

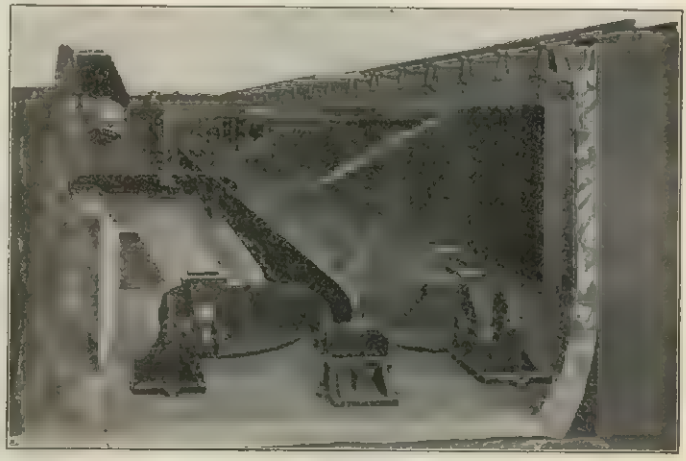
Protected Bearings are a distinguishing feature.

Railroad Track Scales

Winslow two-section railroad track scales are made in lengths of 50, 56 and 60 ft.

The "Type I" seven lever scale illustrated has fewer parts than any known scale, length and capacity considered. It is extra strong and more sensitive .There are no loops, links or forgings to retard action. Only 40 working parts under the platform. All Levers pull down. All scales built strong and heavy to insure long life. Installed on concrete foundation without substructure of steel or wood.

quiet and stops friction on knife edges. Ample motion of platform is given by use of rollers. No main levers are held in suspension or permitted to swing. It is more simple, having less parts than any other motor truck scale on the market There are only five levers, this makes it more enduringly accurate and less liable to get out of order. Each main lever is strong enough to carry full rated capacity.



"Type I" Two-Section R. R. Track Scale All Working Parts on the Same Level.

Winslow Motor Truck Scales

The illustration below shows our "Type H" Motor Truck Scale. All main levers on this type of scale are of the same standard multiple. Each main lever sets on a stationary stand which rests on solid concrete foundation, this keeps the levers

Positively the most enduringly accurate Motor Truck Scale on the market.

You can pay more but can not get better value.

"Type H" Motor Truck Scales. (Five Levers).

FAIRMONT MINING MACHINERY CO.

FAIRMONT, W. VA.

Sales Offices
Huntington Supply & Equipment Co., Huntington W. Va.
Kelser-Geismer Engineering Co., Birmingham, Ala.
McCombs Supply Company, Harlan, Ky.

TRADE MARK REGISTERED
FAIRMONT

Sales Offices
Fairmont Mining Machinery Co., State Bldg., Pittsburgh, Pa.
Evansville Structural Supply Co., Evansville, Ind.
Industrial Supply Co., Terre Haute, Ind.
O. H. Davidson Equipment, Co., Denver, Colo.

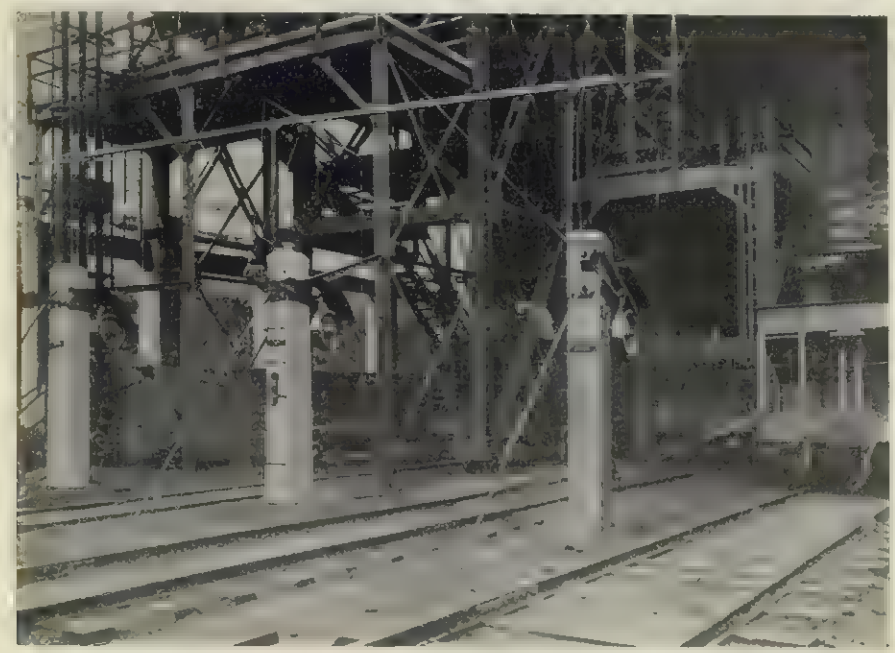
Railroad Car Retarders

Fairmont Tipple Equipment Includes

Tipple Structures—steel and wood; Conveyors, all types—either for outside or underground transportation; Picking Tables; Loading Booms; Car Hauls; Shaker Screens; Gravity Screens; Trip Feeders; Trip Makers; Dumps—Kickback, Cross-over and Rotary.

Fairmont Specialities

Steel Mine Ties; Portable Gathering Pumps; Railroad Car Retarders; Box Car Loaders; Steel Mine Cars; Turtle Back Strainers; Power Coal Augers.



The Fairmont Standard Car Retarder is the safest, most efficient and most economical device yet invented for handling railroad cars under the tipple while loading. The car trimmer by simply pulling with one hand on a hand grip controls absolutely the movement of the car, lowering it gradually as the car is topped. Cars are under complete control of the operator regardless of climatic conditions. No worry with bad brakes and chocks under car wheels.

Prevents accidents—in some states Insurance Companies allow a five percent discount because of its use.

Saves labor—in practically all cases at least one man can be dispensed with. This represents a yearly return on the investment of at least six hundred percent.

Reduces coal breakage—ease of moving cars only short distances at a time keeps the coal up against the end of the loading chute or boom.

Over two thousand tipples in coal fields throughout the country are to-day equipped with Fairmont Retarders.

In addition to the Fairmont Standard Car Retarders with counterweight rewind, we also manufacture a heavy type with motor rewind on the rope drum.

Write for Bulletins and Details.

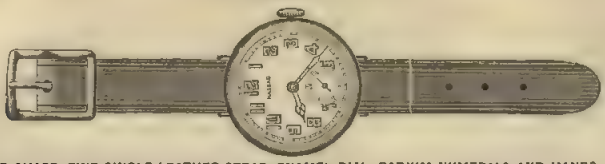
GENTLEMEN'S STRAP WATCHES

UP-TO-DATE MODELS

WINTON DEPENDABLE MOVEMENTS, RADIUM NUMERALS AND HANDS

FURNISHED COMPLETE WITH SEWED PIGSKIN STRAP AND BUCKLE TO CORRESPOND WITH CASE

ILLUSTRATIONS ACTUAL SIZE.



O SIZE, ROUND SHAPE, FINE SINGLE LEATHER STRAP, ENAMEL DIAL, RADIUM NUMERALS AND HANDS.

No. W5463 Nickel Case, 6 Jewel Lever Movement, Nickel Buckle. $11.25

O SIZE, CUSHION SHAPE, SEWED PIGSKIN, ENAMEL DIAL, RADIUM NUMERALS AND HANDS.

No. W5464 Sterling Silver Case, 11 Jewel Lever Movement, Sterling Silver Buckle $20.25
No. W5465 Nickel Case, 6 Jewel Lever Movement, Nickel Buckle 13.25
No. W5466 20 Year Guaranteed Gold Filled Case, 11 Jewel Lever Movement, Gold Filled Buckle 33.00

O SIZE, CUSHION SHAPE, FINE SINGLE LEATHER STRAP, ENAMEL DIAL, RADIUM NUMERALS AND HANDS

No. W5467 Sterling Silver Case, 11 Jewel Lever Movement, Sterling Silver Buckle $18.00
No. W5468 Nickel Case, 6 Jewel Lever Movement, Nickel Buckle 12.00

10½ LIGNE, CUSHION SHAPE, ROUND GLASS. RADIUM NUMERALS AND HANDS

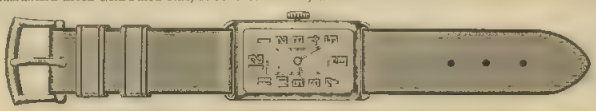
No. W5469 20-Year Guaranteed Gold Filled Case, 16 Jewel Lever Movement, Gold Filled Buckle .. $38.50
No. W5470 25-Year Guaranteed Green Gold Filled Case, 16 Jewel Lever Movement, Gold Filled Buckle 40.50

10½ LIGNE, SQUARE SHAPE. RADIUM NUMERALS AND HANDS

No. W5471 Sterling Silver Case, 16 Jewel Lever Movement, Sterling Silver Buckle $38.50
No. W5472 14K Green Gold Case, 16 Jewel Lever Movement, 14K Buckle 64.00
No. W5473 25-Year Guaranteed Green Gold Filled Case, 16 Jewel Movement, Gold Filled Buckle 42.75

10½ LIGNE, TONNEAU SHAPE. RADIUM NUMERALS AND HANDS

No. W5474 Sterling Silver Case, 16 Jewel Lever Movement, Sterling Silver Buckle $38.50
No. W5475 14K Green Gold Case, 16 Jewel Lever Movement, 14K Buckle. 64.00
No. W5476 25-Year Guaranteed Green Gold Filled Case, 16 Jewel Movement, Gold Filled Buckle 42.75



7x11 LIGNE RECTANGULAR SHAPE. RADIUM NUMERALS AND HANDS

No. W5477 Sterling Silver Case, 15 Jewel Lever Movement, Sterling Silver Buckle $45.50
No. W5478 14K Green Gold Case, 15 Jewel Lever Movement, 14K Buckle. 71.00
No. W5479 25 Year Guaranteed Green Gold Filled Case 15 Jewel Lever Movement, Gold Filled Buckle 49.75

Low Priced Imported Swiss Complete Thin Model Lancet and Nassau Watches

The movements are 14-size, extra quality, nickel damaskeened with exposed winding wheels, 7 and 15 jewels, quick train and lever escapement. Stem wind, pendant set. Furnished either plain or luminous dials. Each watch put up in individual box with manufacturers guarantee.

PRICES ARE FOR COMPLETE WATCHES
ILLUSTRATIONS ACTUAL SIZE

WHITE DIAL

No. W5440 Nickel case, jointed case, 7 jewels complete ..... $ 7.25
No. W5441 Gun Metal Jointed case, 7 jewels complete 6.50
No. W5442 20 year case, screw back and bezel 7 jewels 13.00
No. W5443 20 year case, screw back and bezel, 15 jewels 14.25

LUMINOUS DIAL

No. W5444 Nickel case, jointed case, 7 jewels, complete ..... $ 8.00
No. W5445 Gun Metal Jointed case, 7 jewels, complete 7.25
No. W5446 20 year case, screw back and bezel 7 jewels 13.50
No. W5447 20 year case, screw back and bezel 15 jewels 15.00

WHITE DIAL

No. W5449 Gun Metal Snap Back and Bezel case, 7 jewels, complete $5.00

WHITE LUMINOUS DIAL

No. W5450 Gun Metal Jointed case, 7 jewels, complete $5.75

Nassau 12 Size Watches in Green Gold Filled Cases, Also Sweep Second Stop Watches and Chronograph

7 JEWEL AND 15 JEWEL LEVER MOVEMENTS, BRIDGE MODEL, INTERCHANGEABLE PARTS. ILLUSTRATIONS ACTUAL SIZE.

12 SIZE SILVER FINISH METAL DIAL RAISED Gold Finished Numerals

No. W5451 10 Year Polished Green Gold Filled Case, 7 jewel Movement, complete $14.25
No. W5452 10 Year Engraved Border Green Gold Filled Case, 7 jewel Movement complete 15.00
No. W5453 25 Year Polished Green Gold Filled Case 15 Jewel Movement, complete 17.75
No. W5454 25 Year Engraved Border Green Gold Filled Case 15 Jewel Movement, complete 18.50

12 SIZE

Combination Gilt and Silver Finish Metal Dial, Gilt Center with Silver Finish Border, Panelled Numerals

No. W5455 25 Year Polished Green Gold Filled Case 15 Jewels, complete $17.25
No. W5456 25 Year Engraved Border Green Gold Filled Case 15 Jewels, complete 17.75

12 SIZE

Metal Dial, Engraved Gilt Center with Silver Finished Border Raised Gold Finished Numerals

No. W5457 25 Year Polished Green Gold Filled Case 15 Jewels, complete $18.50
No. W5458 25 Year Engraved Border Green Gold Filled Case, 15 Jewels, complete 19.25

"THE RACER TIMER"

[illegible] movement, lever escapement, nonmagnetic [illegible] nickel case. Records 1-5th second and 30 minute register. Start, stop and fly back by pushing the crown.

No. W5459 Complete $21.00

FOOTBALL TIMER

Can be used [illegible] foot ball, track events, hockey, etc. Nickel [illegible] lever escapement 1-5th second 30 minute register. Starts, stops and starts without [illegible] fly back when desired. Nickel case.

No. W5460 Complete watch, each $22.25

"THE RACER TIMER"

Jewelled lever gold plated lever escapement. Snap backed case. Records 1-5th second and has a 15 minute register. Start, stop and fly back from the side.

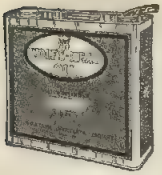
No. W5461 Complete $22.25

WINTON "CHRONOGRAPH" 12 SIZE

20 Year gold filled case, 17 jewel movement, nickel damaskeen finished plates, straight line lever escapement, compensated balance, pendant set and stem wind. Registers 1-5th second and has a 30 minute register.

No. W5462 Complete..... $113.50

WOLF'S HEAD LUBRICANTS



For Motor Cars and Trucks, Gas Engines, Motorcycles and Motor Boats.

WOLF'S HEAD OILS

have been tested and endorsed by the leading manufacturers of Automobile and Motor Boats in America. All WOLF'S HEAD OILS are made from straight Pennsylvania crude (the most expensive in the world) and are **noted** for freedom from carbon, and extraordinary mileage. WOLF'S HEAD QUALITY makes customers.

WOLF'S HEAD CYLINDER OIL

Light—Light Body—For water cooled engines of high compression having close fitting piston rings and of comparatively small horse power. May be used in cars whose bearings have recently been tightened until moving parts are thoroughly worked in. **Flows freely in cold weather.**

Medium—Medium Body. This oil is the result of constant study to produce an oil that can be **recommended for all round service.** Keeps its body under heat and produces greatest mileage where an oil of medium body is required.

Heavy—Heavy Body—For air cooled cars and most Foreign and American cars with loose fitting piston rings requiring a heavy bodied oil of superior lubricating qualities and high flash test.

Extra Heavy—Especially desirable for use in hot weather and in cars with loose fitting piston rings.

Wolf's Head Cylinder Oil	In Steel Drums About 55 Gal. Per Gal.	In Steel Drums About 30 Gal. Per Gal.	In Steel Drums About 15 Gal. Per Gal.	In 10 Gal. Cases Two 5-Gal. Cans Per Case	In 5 Gal. Cans 1 in a Case Per Can	In 1 Gal. Cans 12 in a Case Per Case
Light	$0.95	1.01	1.13	11.00	5.65	15.00
Medium	1.00	1.06	1.18	11.50	5.90	15.60
Heavy	1.05	1.11	1.23	12.00	6.15	16.20
Special Heavy	1.10	1.16	1.28	12.50	6.40	16.80

NO. 8 SPECIAL CYLINDER OIL

The cleanest extra heavy Oil on the market. A great summer Motor Oil. The lessened effectiveness of your motor's cooling system in hot weather, coupled with dilution of the lubricating oil by unburned gasoline makes the use of the heavier bodied oils advisable in many motors, during the summer months. Wolf's Head Oil "Number 8" is a highly filtered Motor Cylinder Oil of very Heavy Body and High Fire Test. Keeps motors cool—gives perfect lubrication in the hottest weather and under the most severe driving conditions—burns away slowly and gives great mileage—resists gasoline dilution—makes noisy motors quiet.

Wolf's Head No. 8 Special Cylinder Oil	In Steel Drums About 55 Gal., Per Gal.	In Steel Drums About 30 Gal., Per Gal.	In Steel Drums About 15 Gal., Per Gal.	In 10 Gal. Cases Two 5-Gal. Cans Per Case	In 5 Gal. Cans 1 in a Case, Per Can	In 1 Gal. Cans 12 in a Case, Per Case
	$1.50	1.56	1.68	16.50	8.40	21.60

Original Packages

Oil—Two 5 Gallon, One 5 Gallon or Twelve 1 Gallon Cans are put in a wooden case.

Note—All cans and barrels are sealed when they leave our Factory. See that they reach you in the same condition. No extra charge for "original" packages. Our Oils and Greases are all packed in handsome lithographed cans.

FOUR BROTHERS QUALITY GREASE

A Transparent Quality Grease, manufactured of the highest grade of lubricating oils. **Four Brothers Quality Grease** can now be used for general lubricating purposes. It is not affected by the weather, and there is no better lubricant on the market today. **Four Brothers Quality Grease** can be used on fine gears, small tools, chains, printing presses, axles of buggies and wagons, and also on all kinds of light machinery.

In 14 Ounce Tin Boxes.....Per Dozen, $3.50

In 3 Pound Tin Pails.....Per Dozen, 6.50

Packed—Tin Boxes, One-Third Gross. Tin Pails, Two Dozen in a Case.

GARGOYLE MOBILOILS

"E"—Light Body.

A straw-colored oil for lubrication of vertical gasoline engines where an oil of light body is required. It flows freely in cold weather. Particularly suited to Fords.

"A"—Medium Body.

A dark amber-colored oil for lubrication of water-cooled engines requiring a rich lubricant. Also for the motor and enclosed chains of electric vehicles, for motorcycles where a medium-bodied oil is required and for motorboat engines. It holds its body under extreme heat.

"B"—Heavy Body.

For both air and water-cooled engines where a heavy-bodied oil is required. It holds up compression under extreme heat. This oil is especially suitable for lubrication of motorcycle and tractor engines.

Specialties: for Cylinders	55 Gallon Steel Drums, Per Gal.	30 Gallon Steel Drums, Per Gal.	15 Gallon Steel Drums, Per Gal.	Two 5-Gallon Cans, Per Case	One 5-Gallon Can, Per Case	Ten 1-Gallon Cans, Per Case
"E" Light Cylinder	$0.95	1.00	1.05	10.85	5.60	12.50
"A" Medium Cylinder	.95	1.00	1.05	10.85	5.60	12.50
"B" Heavy Cylinder	1.00	1.05	1.10	11.35	5.85	13.00

Arctic—Light-Medium Body.

A light-colored oil of intermediate body for both summer and winter lubrication of gasoline engines. It flows freely in cold weather.

"C"—For Transmission.

A heavy, dark fluid oil for transmission and differential lubrication, especially for ball or roller-bearing types, as well as for timing gears and worm gears. It will follow coat, cushion, and thoroughly lubricate the gears, preventing unnecessary wear, allowing them to engage easily and operate without noise.

Non-returnable steel drum equipped with reversible plug with faucet attached.

"BB" Heavy Body for Tractors

A dark ruby oil especially suitable for lubrication of tractor engines. It maintains compression and power under extreme heat.

	55 Gallon Steel Drum, Per Gal.	30 Gallon Steel Drum, Per Gal.	15 Gallon Steel Drum,* Per Gal.	Two 5-Gal. Cans, Per Case.	One 5-Gallon Can, Per Case	Ten 1-Gallon Cans, Per Case
Arctic, Light-Medium	$0.95	1.00	1.05	10.85	5 60	12 50
"C" Transmission	.75	.80	.85	8.85	4.50	10.50
"BB" Tractor	1.00	1.05	1.10	11.35	5 85	13.00

*Note—Extra Charge on:

15 gallon Drums	**$0.50 Net**
30 gallon Drums	**.75 Net**
55 gallon Drums	**No Extra**

GARGOYLE MOTOR GREASE

Gargoyle Mobiloil "C C"

A heavy lubricant of dark, amber color, semi-fluid at operative temperatures. It will follow, coat, cushion, and thoroughly lubricate the gears, preventing unnecessary wear and allowing them to engage easily and operate without noise. Its use is recommended where, with a fluid oil, leakage would occur from the transmission case or rear axle housing.

A Semi-Solid Specialty for Transmissions and Differentials.

	Ten 5-Pound Cans, Per Case	Six 10-Pound Cans, Per Case	One 25-Pound Can, Per Case	Two 25-Pound Cans, Per Case	Half Barrels (Wood) Per 100 Pounds	Full Barrels (Wood) Pounds
Gargoyle Mobiloil "CC"	$11.25	11.40	4.50	8.90	13.50	12.50

Mobilubricant

A high grade cup grease. A smooth light-colored medium-bodied grease, free from all particles of insoluble and non-lubricating matter. For packing the wheels, steering-gear housing, transmission, differential, universal joints and grease cups of automobiles.

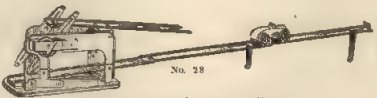
	Barrels, Per 100 Pounds	Half Barrels, Per 100 Pounds	50 Pound Cans, Per Can	25 Pound Cans, Per Can	12 5-Pound Cans, Per Case	48 1-Pound Cans, Per Case	24 1-Pound Cans, Per Case
Mobilubricant	$13.00	14.00	8.50	5.00	11.50	10.00	5.50

Here Are Toy Items Any Store Can Make Money On!

These are the famous "Sandy Andy" Toys and Games—the most popular items of our entire line. You can order direct from this page, or send a card for circular No. 9 and find out about the entire line. Most jobbers sell these items. Ask yours about them.

No. 76

"Sandy Andy"
The original automatic sand toy. Thousands have been sold in hardware stores. All metal, beautifully decorated. Each toy packed in display box
No. 60—10⅝ in. high, $5.25 per carton of 1 doz.
No. 76—13½ in. high, $6.00 per carton of 1 doz.
No. 101—17 in. high, $8.00 per carton of ½ doz.

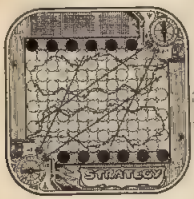


No. 28

No. 28—"OVER and UNDER"
A mechanical toy operating with spring motor. Made entirely of metal, attractively finished in colors. Packed in display box.
No. 28—25 in. long. $8.25 per carton of 1 dozen.

No. 104

No. 104—Sand Crane
Another popular automatic sand toy. Very interesting action. Made entirely of decorated metal and each toy packed in display box.
No. 104—13¾ in. high, $5.00 per carton of ½ doz.



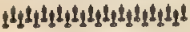
No. 32—"OVER and UNDER" LIFT
Larger size, heavier metal; double-action car-lifting apparatus; more interesting action and larger toy. Decorated in colors; packed in display box.
No. 32—30½ in. long. $8.00 per carton of ½ doz

STRATEGY—A New Game!
All metal board, 16½ in. square, beautifully decorated and with checker board on reverse side. An interesting game, full of fun. Complete with 4 men for playing. Packed in individual box.
No 31—STRATEGY. $8.00 per carton of 1 dozen.

No. 58

No. 58—Dumping Sandy
Still another automatic sand toy with interesting action. Decorated metal; each toy in display box.
No. 58—12 in. high $6.00 per carton of 1 doz.

MOTOR RACE
A game just like a real motor race. 6 miniature cars and oil metal board, 16½ in. square, decorated in colors. Packed in individual box
No. 29—MOTOR RACE. $6.00 per carton of 1 doz.



No. 31

No. 54

No. 54—Panama Pile Driver
An automatic marble toy with "regular" pile driver action. 12 marbles included. Made of decorated metal; packed in display box.
No. 54—16⅝ in. high. $4.80 per carton of ½ doz.

"Sandy Andy" Laundry Sets
Wonderfully realistic items arranged into four attractive sets. Each set packed in individual box.
No. 1—Metal Tub, Clothes Reel, METAL Wash Board, Clothes Pins, $4.25 per carton of 1 dozen sets
No. 1—Metal Tub, Clothes Reel, GLASS Wash Board, Clothes Pins. $4.13 per carton of 1 dozen sets.
No. 2—Same as No. 1, and also Wringer (with rubber rolls and Basket $6.63 per carton of ½ dozen sets.
No. 3—Same as No. 2; and also Metal-stand Ironing Board and Iron. $7.00 per carton of ½ dozen sets

No. 57

No. 57—Bowler Andy Mill
Automatic marble toy combining elevator and wind mill action. 8 marbles included. Decorated metal; packed in display box.
No.57—21½ in. high $6.00 per carton of ½ doz.

No. 56—"Bizzy Andy" Trip Hammer.
Operates like a large hammer. Fast, snappy action. 6 marbles included.
No. 56—10½ in. high. $4.80 per carton of 1 dozen.

No. 42-13T

Decorated Metal Dish Sets
New silhouette designs on solid color. Latest style pieces.
Set No. 235-13T—2 Cups, 3 Saucers, 3 Plates, 1 Sugar Bowl, 1 Creamer, 1 Tea Pot, 1 Tray. Displayed in box. $8.00 per carton of 1 dozen sets.
Set No. 242-13T—2 Cups, 3 Saucers, 1 Plate, 1 Tea Pot, 1 Tray. Displayed in box. $4.00 per carton of 1 dozen sets.

17B

No. 17B—Sand Pail and Shovel
1½ in. deep. 6¼ in. diam. Silhouette designs on assorted solid colors. Each set in individual box. $2.70 per carton of 1 dozen sets.

No. 47B—Sprinkling Can
2 qt. size. Silhouette designs on assorted solid colors. Each in individual box (not nested) $6.53 per carton of 1 dozen.

Orders accepted only for full cartons as noted above for each item. Broken cartons not sold.
TERMS: 2% 10 days—net 30 days from date of shipment. Delivery: F.O.B. Pittsburgh, Pa. Write for Circular No. 9 and get posted on our full line of "Sandy Andy" Toys and Games.

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English and Bavarian Imported Dinnerware

The Latest and Best Productions of the Leading Foreign Factories. Our Line Excels in Variety, Style, Value and Quality, Any Shown on the Market.

All Sets Shipped F. O. B. Warehouse, Cleveland, Ohio

The Alva Pattern

Manufactured by Wood and Son, Burslem, England. Is one of the best patterns they have ever made. It is their new Octagonal shape. A Chinese design in blue under the glaze. The brown line on edge of each piece, together with traced handles, make it a very showy and attractive pattern.

No. 2942 42-piece set, per set ...**$31.20**
No. 2943 57-piece set, per set.... **56.75**
No. 2944 100-piece set, per set.... **88.50**

The Vogue Pattern

Manufactured by Johnson Bros., Hanley, England. Admirers of strong character designs will naturally be pleased with this pattern. It is an attractive, bold conventional design, neatly arranged in a border. We recommend it especially for its striking appearance, beautiful finish, and careful selection.

No. 2948 42-piece set, per set ..**$34.90**
No. 2949 57-piece set, per set. **62.40**
No. 2950 100-piece set, per set.... **97.60**

Bavarian pure white china, gold border design, best 18k French coin gold, with two black hair lines, separating two gold bands, full mat gold knobs and handles.

No. 2954 42-piece set, per set...**$ 59.00**
No. 2955 57-piece set, per set... **113.50**
No. 2956 100-piece set, per set... **158.00**

42-piece set consists of:
½ doz. teacups and saucers
½ doz. breakfast plates
doz. dessert plates
doz. fruit saucers
½ doz. soup plates
1 only covered sugar
1 only cream
1 only 10 in. platter
1 only open vegetable dish
1 only bowl

57-piece set consists of
½ doz. teacups and saucers
½ doz. dinner plates
½ doz. dessert plates
½ doz. bread and butter plates
½ doz. soup plates
½ doz. fruit saucers
1 only open vegetable dish
1 only open salad
1 only platter 10 in.
only platter 12 in.
1 only gravy boat
1 only pickle dish
1 only covered vegetable
1 only covered butter
1 only covered sugar
1 only cream
1 only bowl

100-piece set consists of:
1 doz. teacups and saucers
1 doz. dinner plates
1 doz. dessert plates
1 doz. bread and butter plates
1 doz. soup plates
1 doz. fruit saucers
1 only open vegetable
1 only platter 10 in.
1 only platter 12 in.
1 only boat
1 only pickle
1 only covered vegetable, oblong
1 only covered vegetable, round
1 only covered butter
1 only covered sugar
1 only cream
1 only bowl

The Celia Pattern

Manufactured by Johnson Bros., Hanley, England. A black Greek key over a brown border, a pleasing conventional design, gold edges and traced knobs and handles.

No. 2945 42-piece set, per set....**$35.25**
No. 2946 57-piece set, per set.... **63.25**
No. 2947 100-piece set, per set.... **98.75**

The Medway Pattern

Manufactured by J. G. Meakin, Hanley, England. The decoration is a neat, clean cut border engraving of small rose buds, brown lattice design, and overlaid with cobalt blue, filled in by hand. Positively the best value offered on the market. Gold edges and traced handles.

No. 2951 42-piece set, per set....**$35.25**
No. 2952 57-piece set, per set.... **63.25**
No. 2953 100-piece set, per set.... **98.75**

The Milford Pattern

A distinctive French border design of ivory panels, in which is a pink rose bud in natural colors. Spacings of brown and blue lines make the effect that of French China. All knobs and handles are delicately traced with gold. Best quality English Semi-Porcelain.

No. 2957 42-piece set, per set...**$ 36.50**
No. 2958 57-piece set, per set... **65.25**
No. 2959 100-piece set, per set... **102.00**

FULL SATISFACTION GUARANTEED. We will promptly refund money or exchange any article bought from this catalog which does not prove entirely satisfactory on receipt.

BUILD AS YOU GROW

With Heller Shelving it is not absolutely necessary to tear out all of your present shelving and install new modern equipment. Install At This Time a small combination. After a few months, when the additional profits from the first installation warrant, install one or more cabinets until your store is completely modernized with Heller's Hardware Shelving

Cabinet No. 606 Cabinet No. 605 Cabinet No. 602

Cabinet No. 322 Cabinet No. 309 Cabinet No. 305

Combination No. 122 shown above is the logical Combination to install NOW. Size 23 feet 5 inches long, 7 feet 1½ inches high. Can be furnished in two depths. Ask about them

EASY TO INSTALL. simply cut away enough of your present shelving as Combination No. 122 will fit in. It is not necessary to remove shelving higher than 7 feet 1½ inches as this will rest on top of Combination No. 122.

Change can be made after working hours with your regular sales force.

No interruption in your business and no confusion.

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W. C. Heller & Co., 767 Bryant St., Montpelier, O.

OR 20 VESEY ST., NEW YORK CITY

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MOORE PUSH-PINS

Glass Heads—Steel Points

Moore Push-less Hangers

The Hanger with the Twist

ARE RAPID SELLERS

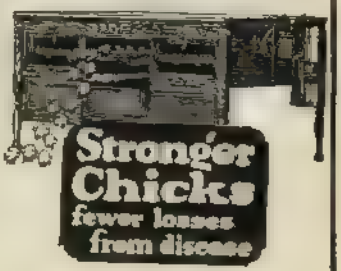
It is to your advantage to adopt "Gulliver's Method" of Displaying goods; ask us about this wonderful way to increase sales.

MOORE PUSH-PIN CO.

(Wayne Junction)

PHILADELPHIA, PA.

Established 1900



Stronger Chicks fewer losses from disease

That's one big reason why

Queen Incubators

sell and satisfy. Users have "luck" with Queen chicks.

Ask us how we help you build up a profitable Incubator Department.

Queen Incubator Co.

1123 North 14th Street

Lincoln, Nebr.

In the design of these reflectors sufficient room has been allowed for cleaning without removing lamps from reflectors, thus reducing the lamp breakage to a minimun.

The inside glass protection to the silver plating is easily cleaned by simply wiping (inside of reflector only) with a damp cloth. They need not be cleaned as frequently as other type, and should never be cleaned as immersed in water.

No. 610

No. 600.

For 100 Watt Mazda C Lamps.

The "Jupiter" is used for the brilliant illumination of show windows whose height equals about twice the depth.

The "Jove" is a scientifically correct window lighting reflector with a high temperature backing, designed especially for use with a 100 watt Mazda lamp.

Nos.	Width Ins.	Depth Ins.	Height Ins.	Holder Ins.	Weight Each Lbs.	Std. Pkg.	Mfrs. List Each
610	10	10 ⅛	7 ⅝	3 ¼ A	2 ¼	12	$5.00
600	10	9 13-16	7 ⅝	3 ¼ A	2 ⅛	12	5.00

No. 778.

No. 731.

For 75 Watt Mazda C Lamps.

The scoop reflector was designed for windows of medium size where the depth is approximately equal to the height.

This reflector gives a downward light of 450 candle power.

The hood reflector is designed to light low, shallow windows as efficiently as the Jupiter lights higher windows of the same type. The design of this hood reflector is such as to produce a high concentration in the window—cutting the light off sharply at the window plate.

Nos.	Width Ins.	Depth Ins.	Height Ins.	Holder Ins.	Weight Each Lbs.	Std. Pkg.	Mfrs. List Each
778	7 7-16	6 11-16	5 5-16	2 ¼ O	1	24	$4.00
731	8 ⅝	8 ⅞	5 3-16	2 ¼ H	1 ¼	36	4.75

For Direct Lighting.

The X-Ray reflectors, known as the Beehive type, are designed along the latest scientific lines. They give a wide spread of light and hide the lamp from view without sacrificing efficiency. This line is especially well adapted for the illumination of factories, shops of all kinds, gymnasiums, armories, indoor ball and tennis courts, pressrooms, power houses, foundries, etc.

No. 535.

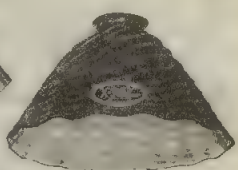
The Jumbo is designed for illumination of very large interiors, such as armories, coliseums, erecting shops, etc.

No. 580.

Nos.	Diam., Ins.	Ht., Ins.	Size of Holder Ins.	Size of lamp Watts	Weight Each Lbs.	Std. Pkg.	Mfrs. List Each
*535	5 ⅝	5 ½	2 ¼ H	75 Mazda C	¾	24	$2 00
570	7 ⅝	6 ⅞	3 ½ A	100B or C	1 ¼	16	3 50
575	9 ⅞	8	3 ½ A	200C	1 ⅞	8	4 25
580	11 ⅞	9 ⅝	Special	300, 400, 500C	4 ½	4	9.50

*25, 40, 60 and 60 watt Mazda B lamps may be used in the No 535 with 2 ¼ inch "O" holders.

No. 700



No. 696.

No. 710.

Semi-concentrating Reflectors.

The No. 700 reflector, which is similar in design to the No. 696, as illustrated, is called a semi-concentrating reflector because it does not spread the light as far as the distributing reflectors, and yet does not confine the light into such a small area as do the concentrating reflectors shown. The No. 700 reflector is used with a 100 watt Mazda B or C lamp.

Concentrating Reflectors.

The concentrating reflectors should be used whenever a very intense light is wanted over a small area such as over desks, counters, special machinery, etc.

Nos.	Diam. Ins.	Ht. Ins.	Size of Holder Ips.	Size of lamp Watts	Std. Pkg.	Mfrs. List Each
700	10	5 ½	2 ¼ H	100B or C	24	$3.50
696	8	5	2 ¼ O	40, 50 and 60B or 75C	24	3.00
710	11 ½	6 ¾	3 ½ A	200C	8	8 00

DOME SHADE HOLDER REFLECTORS

No. 14100-N.

Reflector and Lamp Manufactures' (R-L-M) Standard.

PORCELAIN ENAMELED STEEL

FINISH—Reflectors white inside, Benjamin green outside.

With Type B Holder for Brass Shell Sockets.

Nos.	Size of lamp Watts	Reflector Designation	Diam. Ins.	Ht. Ins.	Net Wt. Lbs.,ea.	Std. Pkg.	List Price
14075B	75	Dome 75	12	5 27-32	1 ⅜	10	$2.15
14100B	100, 150	Dome 100	14	7 1-16	2 1-16	10	2.55
14200B	200	Dome 200	16	8 3-16	2 9-16	10	2.91

With Type N Neck for Standard 2¼ Inch Shade Holders.

14075N	75	Dome 75	12	5 15-32	1 ⅜	10	$2.00
14100N	100, 150	Dome 100	14	6 11-16	2 1-16	10	2.40
14200N	200	Dome 200	16	7 13-16	2 9-16	10	2.76

With Typ N Neck for Standard 3½ Inch Shade Holders.

14300N	300, 400 500	Dome 500	18	7 13-16	3½	10	$3.84
14750N	750, 1000	Dome 1000	20	10¾	4	10	5.76

With Type P Holder for Porcelain Sockets.

14075P	75	Dome 75	12	6 5-16	1⅜	10	$2.20
14100P	100, 150	Dome 100	14	7 17-32	2 1-16	10	2.60
14200P	200	Dome 200	16	8 21-32	2 9-16	10	2.96

With Type S Holder for Benjamin Screw Thread Sockets and Fixtures.

14075S	75	Dome 75	12	5 15-16	1⅜	10	$2.15
14100S	100, 150	Dome 100	14	7 5-32	2 1-16	10	2.55
14200S	200	Dome 200	16	8 9-32	2 9-16	10	2.91

Prices for reflectors only, and do not include sockets or lamps. Type S Reflectors can be used with Benco Sockets and Benjamin Ceiling Units.

DOME REFLECTOR SOCKETS

Reflector and Lamp Manufacturers' (R-L-M) Standard

PORCELAIN ENAMELED STEEL

Prices do not include wires or lamps.

Specifications.

No. 5642.

REFLECTOR—One piece porcelain enameled steel reflector. A continuous smooth surface of porcelain enameled steel, inside and out, is opposed to all the effects of gases and moisture. As nearly as can be made, it is a weatherproof industrial lighting fixtures.

SOCKET—National Electrical Code Standard. Socket is two-piece porcelain, Benjamin easy-to-wire type with Benjamin Lamp Grip, which prevents loosening and falling of lamp under vibration.

FITTING—Extra heavy X type separable fitting.

TAPPING—Fixture regularly includes fitting tapped for ⅛ inch iron pipe stem. Fitting tapped ⅜ or ¾ inch, or insulating bushings (13-32 inch opening) for attaching lamp cord, may be ordered without advance in list price; or, ½ inch insulated bushing at an advance of 5 cents list.

FINISH—Outside of reflector is Benjamin green; inside is white porcelain enamel.

Nos.	Size of lamp Watts	Reflector Designation	Diam. Ins.	Ht. Ins.	Net Wt. Lbs. ea.	Std. Pkg.	List Price
5640	50	Dome 50	12	7	2¼	10	$3.50
5641	75	Dome 75	12	7 31-32	2⅜	10	3.50
5642	100, 150	Dome 100	14	9 5-16	3¼	10	3.80
5643	200	Dome 200	16	10⅝	3⅝	10	4.60
5644	300, 400 500	Dome 500	18	12	4 3-16	10	5.70
5645	750, 1000	Dome 1000	20	14 15-16	5¾	10	7 70

ELLIPTICAL ANGLE REFLECTORS

PORCELAIN ENAMELED STEEL

Specifications.

No. 5525.

REFLECTOR — Porcelain enameled steel elliptical angle reflector.

SOCKET—National Electrical Code Standard. Socket is two-piece porcelain, Benjamin easy-to-wire type with Benjamin Lamp Grip, which prevents loosening and falling of lamp under vibration.

FITTING—Extra heavy X type fittings.

TAPPING—Fixture regularly includes fitting tapped for ⅛ inch iron pipe stem. For fitting tapped ⅜ inch, add 10 cents to list price; for fitting tapped 1 inch or 1½ inch, add 15 cents to list price.

FINISH—Inside of reflector is white porcelain enamel; outside is black.

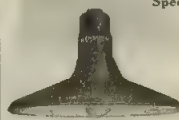
Nos.	Size of lamp Watts	Diam. Ins.	Ht. Ins.	Net Wt. Lbs. ea.	Std. Pkg.	List Price
5522	60, 75	8½x13½	12⅝	2¾	5	$4.20
5525	100, 150	8½x13½	13¼	3	5	4.20
5526	200	10¾x15	15⅝	3	5	6.00
5537	300, 400, 500	14 x20	18¾	3¾	5	9.70
5538	750, 1000	14 x20	20 7-16	4⅛	5	9.00

SHALLOW BOWL REFLECTOR SOCKETS

PORCELAIN ENAMELED STEEL

Prices do not include wires or lamps.

Specifications.



No. X5423.

REFLECTOR — One-piece porcelain enameled steel reflector with a continuous, smooth surface of porcelain enamel opposed to the influences of corrosion.

SOCKET — National Electrical Code Standard. Socket is two-piece porcelain, Benjamin easy-to-wire type with Benjamin Lamp Grip, which prevents loosening and falling of lamp under vibration.

FITTING—Extra heavy X type separable fitting.

TAPPING—Fixture regularly includes fitting tapped for ⅛ inch iron pipe stem. Fitting tapped for ⅜ or ¾ inch, or insulated bushing (13-32 inch opening) for attaching lamp cord, may be ordered without advance in price; or ½ inch insulated bushing at an advance of 5 cents list.

FINISH—Outside of reflector is Benjamin green; inside is white porcelain enamel.

Nos.	Size of lamp Watts	Diam. Ins.	Ht. Ins.	Net Wt. Lbs. ea.	Std. Pkg.	List Price
X5437	25, 40, 50, 60	12	6⅝	2½	10	$3.80
X5421	75	12	7⅝	2½	10	3.80
X5423	100, 150	14	9 7-16	2⅝	10	3.80
X5425	200	16	9¾	3¼	10	4.60
X5509	300, 400, 500	18	10⅝	3 5-16	10	5 70

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PAPER FURNITURE

104-Piece Housekeeping Set!

Children, Keep House with This Beautiful Set of Furniture

For Two Subscriptions

The "Cream-and-Butter" Flavor

These egg croquettes have the real [illegible] taste. Yet the recipe calls for no cream and [illegible] butter. It is the flavor of Pet Milk which pro[illegible]

In other dishes made with White Sauce, Pet Milk and [illegible] butter will give the "cream [illegible] flavor which demands *much* butter when ordinary [illegible]

Pet Milk is [illegible] ness. Used [illegible] and still pro[illegible]

Order it from your grocer and try it in this recipe

Egg Croquettes

[illegible]

Happy Hours in Baby Land

Without the healthful sleep that comes from wholesome food easily digested, your baby cannot build the tissues that will survive the strain of three score years and ten. After a dinner of Pet Milk he has that perfect sleep and relaxation Every drop of Pet that comes to the nursery is smooth, uniformly rich, easily digestible. Our sterilization prevents the hard curds, and the discomfort, that often come from raw milk. Pet is pure, rich cow's milk, concentrated and sterilized in sealed containers. Give *your* baby Pet and let *him* build in health and happiness for his three score years and ten

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For more than just a wonderland to be visited when one is abroad, Switzerland is the irresistible magnet which draws Americans year after year to Europe. To visit Europe without going to Switzerland is like owning a beautiful setting without the diamond. Here is scenery of unbelievable contrast—gorgeous alpine majesty overlooking peaceful pastures, luxurious groves and placid lakes—tiny picturesque chalets nestling high above splendid lakeside hotels and pensions with every appointment for the comfort and delight of tourists. Quaint hamlets and modern cities are splendid railroad, steamship and motor service—endless variety of scenery and pastimes—and everywhere the friendly welcome of a hospitable people. Excessive rates do not exist and the tourist pays no taxes but is treated as an honored guest. Write for Package No. 117 "Guide to Switzerland" Maps, postcard booklets and folders mailed on receipt of 5 cents to cover postage. *Address, Official Agency of the*

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Chief point on the Simplon line, facing the Savoy Alps, the most convenient headquarters for excursions in all directions. Educational center. Golf.

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Byron's Country, with Lake Leman beautiful as a dream. Excursions to the Castle of Chillon, into the Gruyere Valley and Rochers-de-Naye.

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The garden spot and central point of the Bernese Oberland. Golf. Here the **Jungfrau Railway** carries you to the "Top of the World." Nearby beckon the lovely resorts of **Grindelwald** and **Wengen.**

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In the Swiss-Italian lake district, a floral paradise blooming in perennial sunshine. Golf. Then via the electrified St. Gothard line to

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The "Mecca" of all tourists; its loveliness proverbial, its variety of sports and amusements most interesting. Golf. The excursion center of Central Switzerland.

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With its classical lake ever attractive and interesting as a resting place combines beauty, wealth and intellect. Excursions to Mt. Blanc. Golf.

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Both picturesque mountain villages in the Bernese Oberland, served by the international Loetschberg Simplon line, are ideal health resorts.

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Easily reached via the electric **Loetschberg Railway** and Visp basking at the foot of the monumental Matterhorn with an excursion by rail to the **Gornergrat,** with its superb panoramas.

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The country's metropolis. The "Athens on the Limmat," at the portal of the Alps. Conveniently reached from Zurich are

the Grisons

With its 150 valleys an alpine wonderland. Its invigorating climate, curative springs and sports advantages have made famous its **St. Moritz, Pontresina, Davos** and other resorts. Golf

Sealdsweet Florida Grapefruit

Deper[illegible] ... and strength Seald[illegible] ... that ... the ... what entitle ... Americ[illegible] ... trees

Most ... United States ... en[illegible] ... with ... Chamberlain, the Tsar ... France and ... Premier of Great Brit[illegible] ... attention ...

Quant[illegible] ... Florida groves ... Sealdsweet ... removes ... from the ... and at present ... the rest of the ...

... spring and ... ...

STEELCRAFT
Juvenile Automobiles

The Finest Gift in the World
for Your Child

PRICES
from $15.00 up

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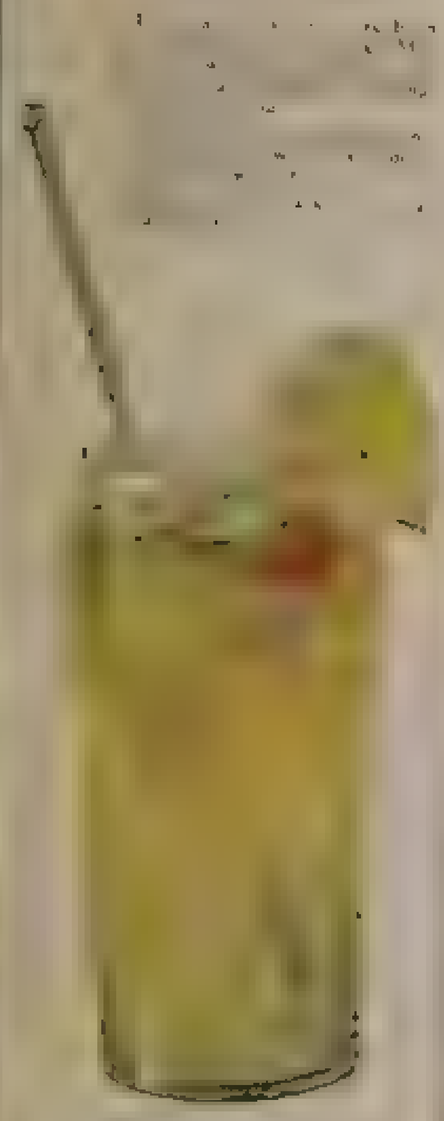
The Queen
of Drinks



Free

Seven *New* French Dressings

from one recipe with variations

HERE are seven delightful variations of the famous French dressing with which you have probably become familiar. You have now a choice of eight delicious dressings for your salads.

The recipes are by a well-known [illegible] Come on, guess. They are yours and [illegible] safe to ask.

Try them. Make your salads *different*. Hear the comments of your family, guests and friends.

The Fundamental

—a delicious "French"

[illegible]

The Variations

[illegible]

You deserve the success [illegible] they are.

Use California Lemons, the [illegible] grate [illegible] squeeze.

Sunkist are the better grade [illegible] from the finest California groves. Their [illegible] are [illegible]. Sunkist [illegible] easily [illegible].

Salads

provide food essentials that all meals should include

[illegible]

[illegible]

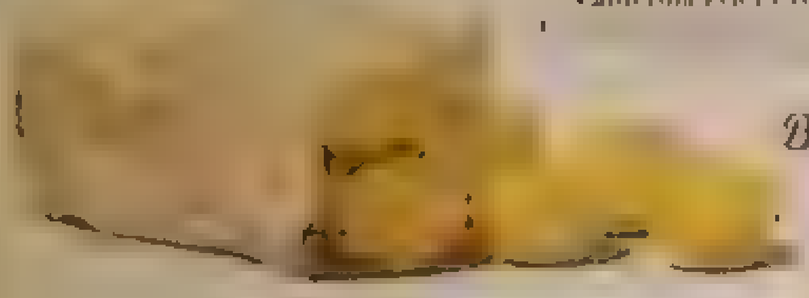
[illegible]

[illegible]

California Sunkist *Lemons*

Uniformly Good

California Fruit Growers Exchange



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Far more than just a wonde[r]
[o]ne is abroad. Sw[i]
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"
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1924

Volume XLI, Number 5

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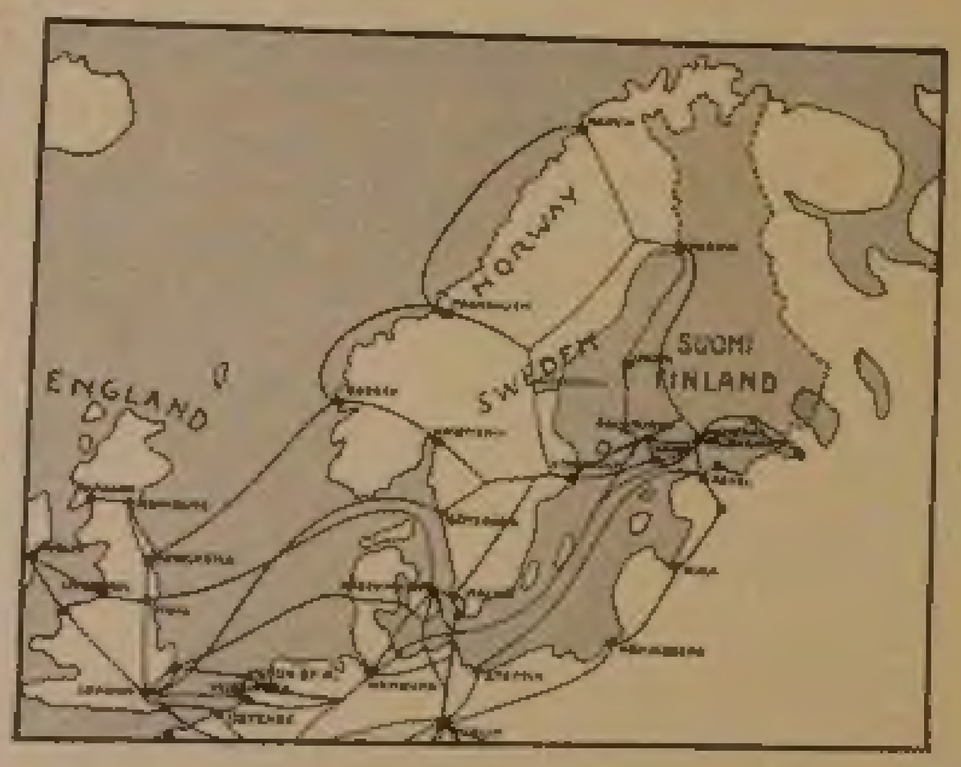

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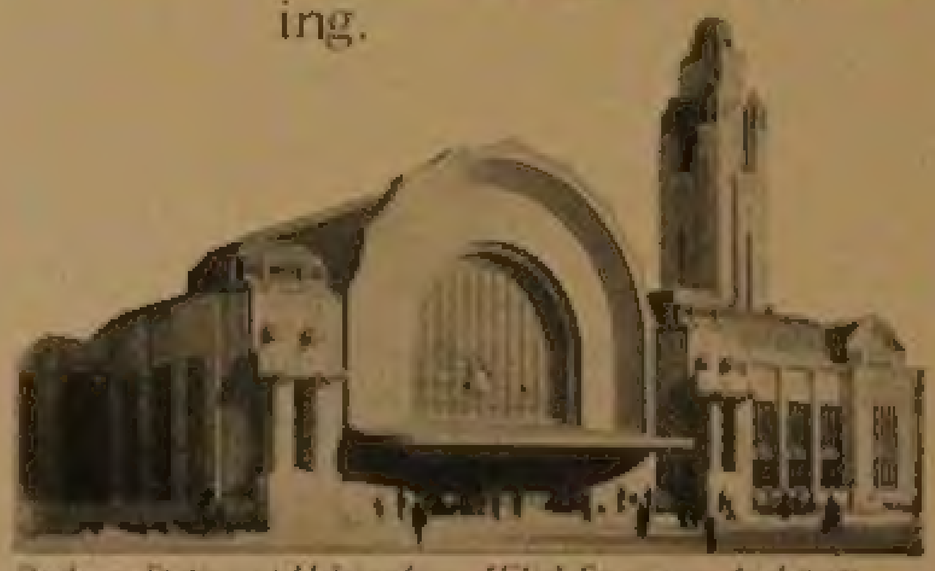

Railway Station at Helsingfors. (Eliel Saarinen, Architect)

FINLAND STATE RAILWAYS

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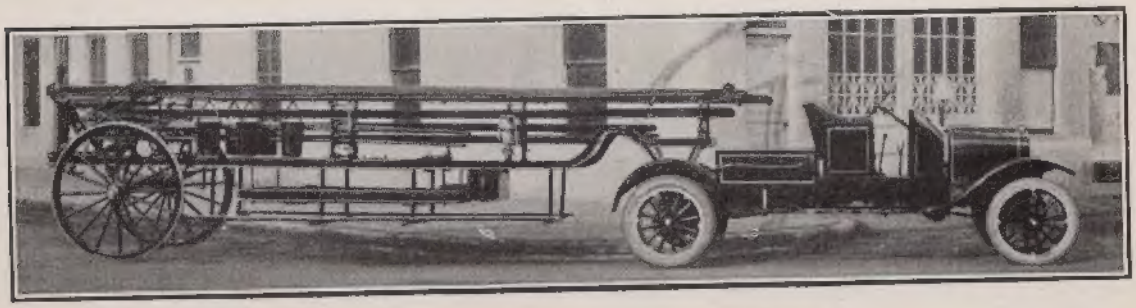
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